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*FINAL REPORT*

*AVIAN ECOLOGICAL INVESTIGATIONS:*

*HORSESHOE LAKE CONSERVATION AREA*

*August 31, 1982*

*Principal Investigator & Author:*

*Sherri Wadham Evans, Researcher*

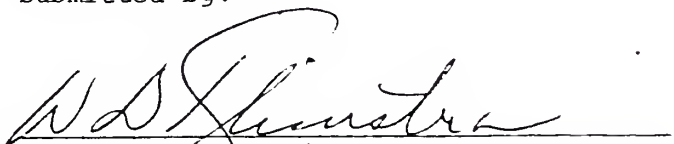
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Avian Ecological Investigations  
Horseshoe Lake Conservation Area

Final Report

Prepared by: Sherri Evans, Cooperative Wildlife Research Laboratory, SIU-C  
Directed by: Dr. W. D. Klimstra, Cooperative Wildlife Research Laboratory, SIU-C

This report summarizes data obtained through standardized, systematic sampling of breeding birds at Horseshoe Lake Conservation Area (hereafter HLCA) in Alexander County, Illinois, during May and June, 1982. Presented are: 1) a physical tabulation of census results; 2) a brief account of each species' occurrence, abundance, distribution and habitat associations; 3) accounts of the habitats within the land-holding and their use by various bird species; 4) recommendations for the conservation of particular species, species groups and/or habitats; and 5) a discussion on the problems and benefits of these investigations. Distribution maps indicating where each species was recorded along transect routes can be found in Appendix A. A vegetative synopsis of each census stop appears in Appendix B. The original data sheets used during censuses are in Appendix C.

HLCA is located in extreme southwestern Illinois, about 12 miles northwest of the confluence of the Ohio and Mississippi rivers, and about 3 miles east of the present Mississippi River channel. The land holding includes about 10,300 acres in portions of Sections 3-18, 20-22, 27 and 28, T.16S, R.2W (Tamms and Cache U.S.G.S. quadrangles). Included within the Bottomland Section of the Coastal Plain Division of Illinois, the area contains an oxbow lake, cypress-tupelo swamps, bottomland forest, and variously-developed, cleared land. The Illinois Department of Conservation (IDOC) manages the site primarily as a winter refuge for a Canada goose population in excess of 150,000. Most all tillable land is cleared to produce green pasture and grain crops, principally corn, winter wheat and milo (Fig. 1).





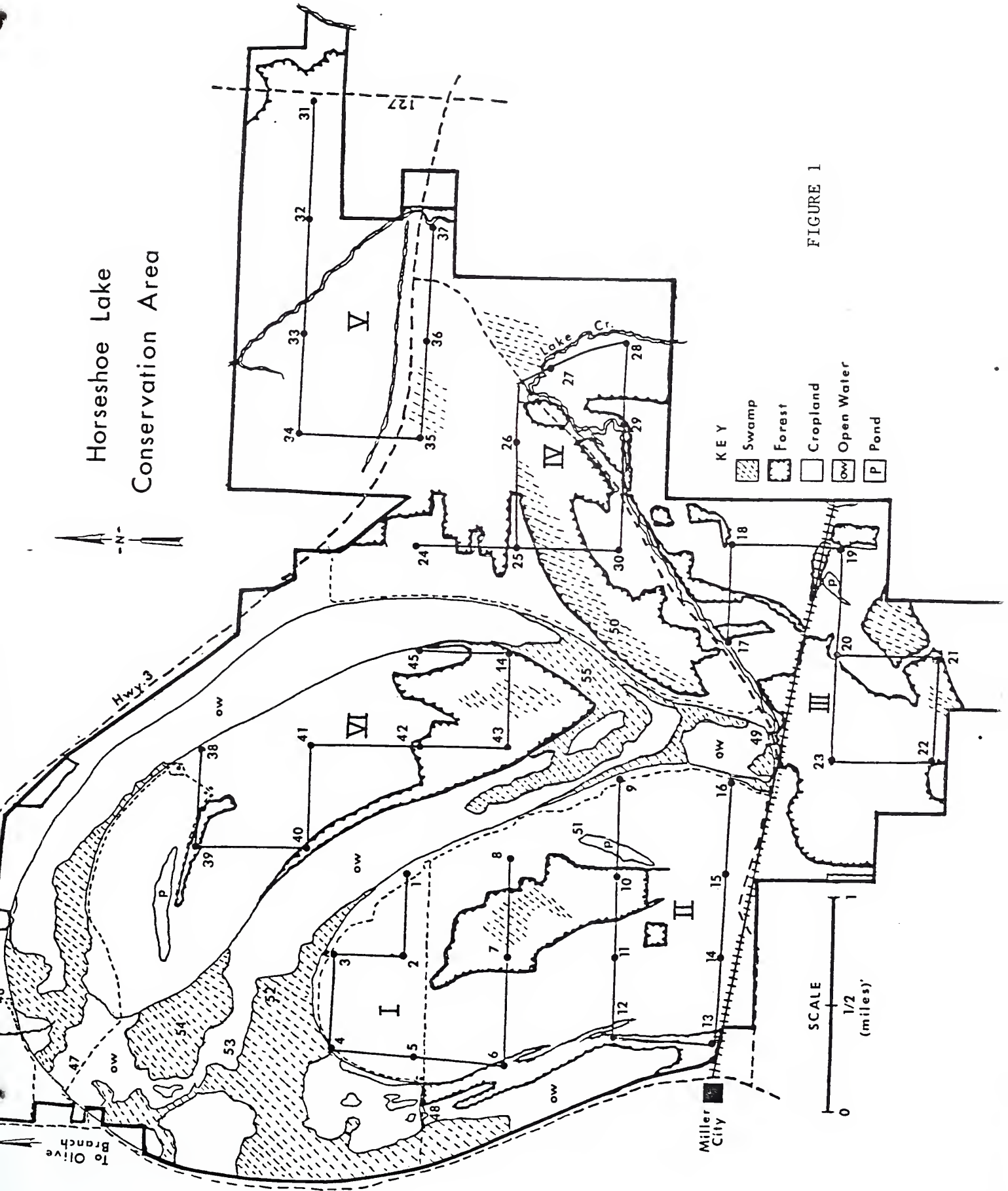


FIGURE 1





The outstanding feature for which the site is named is 2,400-acre Horseshoe Lake, an oxbow lake which occupies a former channel of the Mississippi River. After the channel was abandoned, the resultant swamp underwent seasonal fluctuations in water level and frequently dried up in July and August. These conditions enabled bald cypress and tupelo gum trees to become widely established. Completion of a concrete spillway in 1940 reduced the zone of intermittent flooding and stabilized water levels to an average depth of about 6 feet with 20 miles of shoreline. The lake is fed by Pigeon Roost Creek on the northwest and Black Creek on the west. Overflow from the spillway on the south empties into Lake Creek, which flows eastward and ultimately drains into the Cache River.

Two forested tracts encompassing a total of about 580 acres were established as Nature Preserves in recognition of their unique vegetation; these are located on the island and directly west of the island (inland).

#### Methods

The standard technique specified by the IDOC incorporated spot censusing along predetermined transect routes. Routes, which were oriented north to south or east to west, were designed to systematically sample the entire site without reference to existing vegetation or topographic features. HLCA was divided into 6 Transect Sets, with each set having 7 or 8 census stops at  $\frac{1}{2}$ -mile intervals (transect legs); this was equivalent to about one stop-site per 160 acres. Each set was sampled 4 times during the survey period, which began 19 May and was concluded 29 June. Routes were run twice in each direction to reduce bias reflecting time of day.

At each stop, all birds heard or seen during a 10-minute period were recorded on standardized IDOC data sheets. Birds flying over or through the stop-site were listed separately. Birds were recorded similarly during the  $\frac{1}{2}$ -mile transect legs between stops, although legs often required more than 10 minutes to complete. Notes were kept on broods of water or shorebirds and





when migrants were found. Special effort was made to identify nesting by rare or unusual species.

To assure systematic coverage of habitats omitted or poorly represented by the transect sets, 4 additional days were spent sampling a set of 10 qualitative census stops. Each stop was sampled for 10 minutes as in the regular censusing; however, as the observer either drove or used a boat to reach each stop within 15 minutes, there were no adjoining transect legs.

The observer was at the first census stop or walking the first transect leg at or near sunrise C.D.T. and concluded the survey by 10:00 hours C.D.T. with few exceptions. The start of some surveys was delayed due to insufficient light under dense forest canopy, or temporarily heavy precipitation. Transects were run only under favorable weather conditions: good visibility, little or no precipitation, and wind speeds of less than 13 miles per hour. Time, wind speed, air temperature and sky condition were recorded at the beginning and end of each census.

Transect sets and qualitative stops were located and marked in advance of the actual survey period to avoid problems and delays during censusing. At each census stop, the nearest tree was encircled with orange (or red) and yellow polyethylene flagging tape and affixed with an aluminum tag bearing the stop number. Qualitative stops were marked similarly with flagging but not permanently tagged. Stops in cultivated fields, which could not be permanently marked due to interference with farming machinery, were located by marking trees at opposite ends of the field with orange (or red) flagging, and the distance to the stop determined by pacing. Transect legs through forest were marked with orange (or red) flagging at about 20- to 50-foot intervals.

Transect sets were numbered counterclockwise from the west around the south end of the lake (numbers I - VI), with the last, or sixth, set being on





the island (Fig. 1). Census stops were numbered consecutively (numbers 1 - 45) beginning with Transect Set I, and from the north to the south end of each transect route. Qualitative census stops (numbers 46 - 55) were arranged so that each stop was within 15 minutes travel-time of the next consecutively-numbered stop. A total of 45 census stops, 41 transect legs, and 10 qualitative census stops were sampled.

Vegetation at each census stop was described using the IDOC Community Types and Stratum Ranking System. Strata sampled included trees, saplings, shrubs and ground cover. All plants within a .04 ha circular plot of the stop-site were identified to species, and the relative dominance of each species subjectively ranked according to numbers of individuals and vegetative coverage. Plant species were cited by scientific nomenclature following Mohlenbrock (1975); bird species were cited by common name following the 5th AOU checklist and subsequent supplements.

### Results

Results of the avian survey are presented on the following IDOC tabulation sheets. Habitat Preference indicates those habitats in which each species was most abundant, or most frequently encountered. The habitats are coded by number following Table 1 (page 21).

Of the 115 species recorded, 26 were migrants. There were 4 state-endangered species: Mississippi Kite, Red-shouldered Hawk, Great Egret and Little Blue Heron (the latter two may have been migrants); and, 2 state-threatened species: Veery and Loggerhead Shrike. Three species recorded only at the qualitative stops were: Blue-winged Teal, Hooded Merganser and American Kestrel. Other rare species were: Broad-winged Hawk, Fish Crow, Summer Tanager and Rose-breasted Grosbeak. One species, the Turkey Vulture, was noted within the land holding but incidental to the survey period.



The most abundant and widely distributed species were generally those associated with forest and swamp habitats or woodland edge; these habitats encompassed about 60% of the land holding. The most common species included: Yellow-billed Cuckoo, Red-bellied Woodpecker, Red-headed Woodpecker, Downy Woodpecker, Acadian Flycatcher, Eastern Wood Pewee, Carolina Chickadee, Tufted Titmouse, White-breasted Nuthatch, Wood Thrush, Blue-gray Gnatcatcher, Prothonotary Warbler, Common Yellowthroat, Red-winged Blackbird, Brown-headed Cowbird, Cardinal and Indigo Bunting.





OU	Species (in A.O.U.* order)	Total Number of Different**		Species Present in Additional	Estimated# Population	Habitat Preferences
		TRANSECT LEGS	CENSUS STOPS			
		Species Recorded		Habitats@		
04	Great Blue Heron	2	1	1	1-5	1, 2
01	Green Heron	6	4	3	16-50	1, 2, 3
00	Little Blue Heron	3	3	2	1-5 (M)	1, 2
06	Great Egret	2	2	0	1-5 (M)	2
03	Yellow-crowned Night Heron	2	0	2	1-5	1, 2
02	Canada Goose	2	2	0	1-5	2, 6
02	Mallard	4	3	3	6-15	1, 2, 6
00	Blue-winged Teal	0	0	1	1-5	1, 2
04	Wood Duck	12	2	6	16-50	1, 2, 3, 4, 5
01	Hooded Merganser	0	0	1	1-5	1, 2
09	Mississippi Kite	1	0	0	1-5	5, 7
07	Red-tailed Hawk	4	2	0	1-5	5, 7
09	Red-shouldered Hawk	14	12	3	6-15	4, 5, 7
03	Broad-winged Hawk	1	0	0	0	5
00	American Kestrel	0	0	1	1-5	9
09	Bobwhite	8	8	4	16-50	6, 9
01	Killdeer	19	10	4	16-50	6
00	Mourning Dove	11	13	7	16-50	8, 9
07	Yellow-billed Cuckoo	35	45	6	>50	4, 5
04	Screech Owl	2	1	0	6-15	5
01	Great Horned Owl	2	1	1	1-5	5
03	Barred Owl	11	3	2	6-15	4, 5
00	Common Nighthawk	1	0	0	1-5	6, 10
03	Chimney Swift	2	3	5	16-50	4, 10
03	Ruby-throated Hummingbird	7	6	0	16-50	5, 7
00	Belted Kingfisher	1	0	1	6-15	1, 2
02	Common Flicker	22	20	4	16-50	5
05	Pileated Woodpecker	17	14	7	16-50	4, 5
09	Red-bellied Woodpecker	29	31	9	>50	4, 5
06	Red-headed Woodpecker	30	34	9	>50	4, 5
03	Hairy Woodpecker	14	15	2	16-50	5
04	Downy Woodpecker	27	34	10	>50	4, 5
04	Eastern Kingbird	6	2	4	16-50	1, 7
02	Great Crested Flycatcher	4	2	1	16-50	3, 5
03	Yellow-bellied Flycatcher	1	0	0	M	M
65	Acadian Flycatcher	26	24	7	>50	4, 5
67	Least Flycatcher	1	1	0	M	M
61	Eastern Wood Pewee	31	32	10	>50	5
74	Horned Lark	8	4	0	16-50	6
14	Tree Swallow	1	0	4	6-15	1, 4
17	Rough-winged Swallow	3	1	2	16-50	1, 4
13	Barn Swallow	3	2	1	6-15	1, 6, 10

A.O.U. = American Ornithologists' Union

Indicate the total number of different Transect Legs and Census Stops the species was recorded; five Transect Sets would have about 50 Census Stops and 55 Transect Legs.

If the species occurred in 6 of the "Additional" Census Stops established by the observer for qualitative sampling, enter the number 6 in this column.

Use one of the following categories for this column: 1-5 prs; 6-15 prs; 16-50 prs; or &gt; 50 prs.





Observer: Sherri EvansAVIAN ECOLOGICAL  
INVESTIGATIONSSite: Horseshoe Lake Conservatio  
AreaAddress: R.R. 2, Box 20Year: 1982Cobden, IL 62920

## TABULATION SHEET

Page 2 of 3 (for this year)

AOU No.	Species (in A.O.U.* order)	Total Number of Different**		Species Present in Additional Habitats@	Estimated# Population	Habitat Preferences
		TRANSECT LEGS Species	CENSUS STOPS Recorded			
611	Purple Martin	0	2	1	6-15	1, 4, 10
477	Blue Jay	18	20	3	16-50	5, 10
488	Common Crow	32	34	7	16-50	5, 9, 10
490	Fish Crow	0	1	2	1-5	1
736	Carolina Chickadee	35	39	10	>50	4, 5
731	Tufted Titmouse	28	36	7	>50	5
727	White-breasted Nuthatch	26	27	9	>50	4, 5
718	Carolina Wren	7	5	1	6-15	3, 4, 5
724	Short-billed Marsh Wren	1	0	0	M	M
703	Mockingbird	3	2	0	6-15	8, 9
704	Gray Catbird	1	2	2	16-50	5
705	Brown Thrasher	8	7	1	6-15	5, 9
761	American Robin	10	14	6	16-50	8, 9, 10
755	Wood Thrush	31	25	7	>50	4, 5
758	Swainson's Thrush	0	2	0	M	M
757	Gray-cheeked Thrush	2	0	0	M	M
756	Veery	0	1	0	M	M
766	Eastern Bluebird	1	1	0	6-15	8, 9
771	Blue-gray Gnatcatcher	29	31	10	>50	4, 5
772	Loggerhead Shrike	1	0	0	1-5	9
93	Starling	4	6	1	16-50	8, 9, 10
31	White-eyed Vireo	24	20	5	16-50	5, 9
28	Yellow-throated Vireo	18	15	0	16-50	5
29	Solitary Vireo	1	0	0	M	M
24	Red-eyed Vireo	16	17	2	16-50	5
27	Warbling Vireo	14	15	6	16-50	2, 8, 9
36	Black and White Warbler	1	0	0	M	M
37	Prothonotary Warbler	19	19	10	>50	3, 4
42	Golden-winged Warbler	1	0	0	M	M
41	Blue-winged Warbler	1	0	0	M	M
47	Tennessee Warbler	1	1	0	M	M
45	Nashville Warbler	0	1	0	M	M
48	Northern Parula	15	9	3	16-50	3, 4, 5,
52	Yellow Warbler	6	6	2	16-50	2, 8
57	Magnolia Warbler	2	0	1	M	M
54	Black-throated Blue Warb.	1	1	0	M	M
55	Yellow-rumped Warbler	1	1	0	M	M
58	Cerulean Warbler	4	1	0	16-50	3, 4
62	Blackburnian Warbler	2	1	0	M	M
63	Yellow-throated Warbler	5	4	6	16-50	4
60	Bay-breasted Warbler	1	0	0	M	M
61	Blackpoll Warbler	1	1	0	M	M

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Address: R.R. 2, Box 20

Year: 1982

## TABULATION SHEET

Cobden, IL 62920

Page 3 of 3 (for this year)

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Use one of the following categories for this column: 1-5 prs; 6-15 prs; 16-50 prs; or 50 prs.





## Species Accounts

An annotated list of species recorded during the survey is presented on the following pages. Occurrence, abundance, distribution and habitat associations are given for each species. A species is described as abundant if found to be numerous in the right habitat(s); common if frequently encountered in the right habitat(s); uncommon if infrequently encountered; and, rare if found only once or twice, or if few individuals were ever recorded.

Great Blue Heron -- Uncommon resident around ponds and lakeshore; recorded at stops 19 and 51. Up to 7 birds foraged regularly in the field between stops 19 and 20 and perched on snags at swamp edge between stops 20 and 21.

Green Heron -- Common resident around lakeshore and woodland edge near ponds or streams; recorded at stops 8, 19, 20, 28, 47, 51 and 53 and in 6 transect legs.

Little Blue Heron -- Fairly common species during late May and early June around ponds and flooded fields; recorded at stops 8, 19, 41, 51 and 53. Up to 8 adult and immature birds foraged regularly in the field between stops 19 and 20. No evidence of nesting found.

Great Egret -- Uncommon species associated with flooded fields; recorded at stops 18 and 19. Possibly a late migrant, as it was last observed on 2 June but was found often prior to the survey period in the field between stops 19 and 20 and at the waterfowl banding station on the island.

Yellow-crowned Night Heron -- Uncommon resident of lakeshore, ponds and swamp margins; recorded at stops 51 and 53 and in transect legs between stops 19, 20 and 21. Found foraging in the field between stops 19 and 20 and adjacent swamp margin, at the pond adjacent to the inland Nature Preserve, and among dense emergent vegetation near the mouth of Pigeon Creek.

Canada Goose -- Uncommon resident recorded at stops 5 and 41 and in transect legs between stops 39 and 40, and 41 and 42. A small summer population of about 7 birds frequented flooded fields on the island.

Mallard -- Common resident along wooded lakeshore and in open water having dense emergent vegetation; recorded at stops 8, 38, 41, 48, 51 and 52 and in 4 transect legs. Frequented flooded fields between stops 39 and 41.

Wood Duck -- Abundant resident of swamp, vegetated lakeshore and ponds; recorded at stops 7, 22, 46, 47, 48, 50, 51 and 54 and in 13 transect legs. Eight broods consisting of 4 to 10 young were recorded.

Blue-winged Teal -- Rare resident; a single drake recorded at stop 51 on 18 June.



- Hooded Merganser -- Rare resident which probably nests within the land holding during some years; a single adult female recorded at stop 51 on 10 and 18 June. Bellrose (1978) cited records of a brood with 2 downy young on Horseshoe Lake in 1970, and 2 broods observed there every year during 1970-1974.
- Turkey Vulture -- Although not recorded during the survey, one bird noted flying above floodplain forest in Transect Set V.
- Mississippi Kite -- Rare resident; adult male recorded over the field between stops 19 and 20 and perched in adjacent trees. Additional searches revealed a mate and a third kite in immature plumage. A nest containing a single downy chick was located in a cottonwood tree adjacent to Missouri-Pacific railroad tracks at the north end of the field between stops 19 and 20 (see \* on distribution map). Kites foraged over the field and adjacent forest.
- Red-tailed Hawk -- Fairly common resident of extensive forest; recorded at stops 12 and 31, and in 4 transect legs. Pronounced defense behavior by adult birds suggested nesting at 3 locations: wooded shoreline near stop 40, near forest edge between stops 31 and 32, and in the immediate vicinity of stop 29.
- Red-shouldered Hawk -- Common resident of floodplain forest and swamp; recorded at 15 stops and in 14 transect legs. Nesting was suspected in swamp near stop 50 where an adult and 2 juvenile birds were recorded; along Lake Creek between stops 17 and 30 where an adult perched daily on power lines; and in floodplain forest near stop 20.
- Broad-winged Hawk -- Rare; possibly a casual visitor or late migrant recorded only once on 24 June between stops 28 and 29.
- American Kestrel -- Rare; recorded only once at stop 49.
- Bobwhite -- Common resident of woodland edge, roadsides and fencerows; recorded at 12 stops and in 8 transect legs, and especially abundant in Transect Set II.
- Killdeer -- Abundant resident of plowed fields and cropland, particularly near temporary pools and pond margins; recorded at 14 stops and in 19 transect legs, and especially abundant in Transect Sets I, II and VI. Two nests were located near stop 5, one with 3 feathered young, the other with 4 eggs. Successful nesting indicated by increase in the number of birds observed near the conclusion of the survey period.
- Mourning Dove -- Abundant and widespread resident of open country; recorded at 20 stops and in 11 transect legs, and especially abundant in Transect Sets I and II and at qualitative stops near wooded shoreline.
- Yellow-billed Cuckoo -- Abundant and widespread resident of woodland and woodland edge, but especially in floodplain forest near water; recorded at all stops and in most transect legs. Because its vocalizations were audible some distance from woodland, nesting may have been less widespread than suggested by the data.





- Screech Owl -- Uncommon resident of wet floodplain forest having dense undergrowth, and near streams or standing water; recorded at stop 27 and in transect legs between stops 21 and 22, 34 and 35. Possibly more common than suggested by the data, as it's a secretive nocturnal bird difficult to detect during daytime.
- Great-horned Owl -- Uncommon resident of mature, extensive forest; recorded at stops 17 and 47, and in transect legs between stops 9 and 10, 44 and 45. Also found near stop 19 on two occasions, once while being attacked by nesting Kites.
- Barred Owl -- Common resident of mature floodplain forest, swamp, and wooded shoreline having tall timber; recorded at stops 33, 37, 45, 47 and 51, and in 11 transect legs, and especially abundant in Transect Sets V and VI. Although not witnessed by the observer, it was reportedly harassing site visitors by swooping into boats and campsites to steal fish.
- Common Nighthawk -- Rarely encountered; 2 birds recorded between stops 29 and 30 near sunrise during light precipitation. Not detected near residential or maintenance complexes as might have been expected.
- Chimney Swift -- Common resident of open fields, woodland and woodland edge, picnic areas, and open water; recorded at stops 4, 9, 13, 46, 47, 48, 49 and 54 and in 2 transect legs. Usually observed 'hawking' insects above stop-sites, but frequently flew over or through additional stops. Probably nested in tree cavities in swamp habitat.
- Ruby-throated Hummingbird -- Common resident of floodplain forest, woodland edge (particularly having dense vines), and weedy fields before plowing; recorded at stops 11, 12, 22, 26, 43 and 45, and in 7 transect legs. A pair was observed near stop 7, in floodplain forest having well-developed sapling and shrub strata.
- Belted Kingfisher -- Uncommon resident associated with surface water; recorded at stop 47 and in the transect leg between stops 20 and 21. Four additional sightings of single individuals, made prior to the survey period, were along wooded lakeshore and the pond at stop 51.
- Common Flicker -- Common and widespread resident of woodland and woodland edge; recorded at 24 stops and in 22 transect legs.
- Pileated Woodpecker -- Common resident of mature floodplain forest and heavily-wooded swamp; recorded at 21 stops and in 17 transect legs. Pairs were found near stops 10 and 44.
- Red-bellied Woodpecker -- Abundant and widespread resident of woodland; recorded at 40 stops and in 29 transect legs. Most numerous in extensively wooded areas, especially Transect Sets V and VI.
- Red-headed Woodpecker -- Abundant and widespread resident of forest and swamp having standing dead timber; recorded at 43 stops and in 30 transect legs. Especially numerous between stops 28 and 29 where prolonged standing water resulted in timber-kill, and in similar habitat east of stop 27 not sampled during this survey.



- Hairy Woodpecker -- Fairly common resident of floodplain forest, but less widespread than other woodpecker species; recorded at 17 stops and in 14 transect legs, and most abundant in Transect Set VI.
- Downy Woodpecker -- Abundant and widespread resident of swamp and floodplain forest and woodlots; recorded at 44 stops and in 27 transect legs. Relatively social species, with several pairs often residing in close proximity.
- Eastern Kingbird -- Common resident of open country, particularly weedy fields and open water having scattered trees; recorded at stops 11, 12, 47, 51, 52 and 53 and in 6 transect legs. More conspicuous early in the survey period, becoming uncommon later.
- Great Crested Flycatcher -- Fairly common resident of swamp, floodplain forest, woodlots and wooded ditches; recorded at stops 18, 27 and 48 and in 4 transect legs. Common migrant prior to the survey period.
- Yellow-bellied Flycatcher -- Rare migrant; a single bird recorded near forest edge between stops 20 and 23 on 2 June.
- Acadian Flycatcher -- Abundant and widespread resident of floodplain forest, swamp, and along wooded streams; recorded at 31 stops and in 26 transect legs. Particularly abundant in the island Nature Preserve.
- Least Flycatcher -- Uncommon migrant in late May; 3 birds recorded along Lake Creek at stop 27 and in the subsequent transect leg on 28 May.
- Eastern Wood Pewee -- Abundant and widespread resident of woodland; recorded at 42 stops and in 31 transect legs. Rarely seen but frequently heard; audible some distance from woodland.
- Horned Lark -- Fairly common resident of large agricultural fields, particularly when recently plowed; recorded at stops 2, 5, 41 and 45 and in 8 transect legs. Usually occurring in flocks of 3 to 7 birds.
- Tree Swallow -- Uncommon resident associated with water; recorded feeding over the lake at stops 46, 48, 49 and 53, and over a flooded field between stops 19 and 20. Largest flock recorded consisted of 5 birds.
- Rough-winged Swallow -- Fairly common resident of open fields and water; recorded at stops 19, 47 and 48 and in 3 transect legs. Flocks of about 6 birds frequently perched on power lines, but fewer were recorded during the survey.
- Barn Swallow -- Fairly common resident in the vicinity of residential and maintenance complexes; recorded at stops 38, 41 and 48 and in 3 transect legs. Most abundant on the island, with flocks of about 6 birds foraging over large agricultural fields.
- Purple Martin -- Uncommon resident except near the site superintendent's residence (near stop 5) where a nest box was available; recorded at stops 4, 5 and 47. A group of 5 birds was observed foraging over the lake near stop 52.
- Blue Jay -- Common resident of woodland and woodland edge; recorded at 23 stops and in 18 transect legs. Most abundant in Transect Sets II and V.



- Common Crow -- Abundant and widespread resident of open areas and woodland edge; recorded at 41 stops and in 32 transect legs. Flocks of up to 11 birds were noted.
- Fish Crow -- Rare resident associated with water; recorded at stops 13, 48 and 51. Sightings consisted of 1 or 2 birds, recognized solely by their calls.
- Carolina Chickadee -- Abundant and widespread resident of floodplain forest, swamp, wooded shoreline and woodlots of various size; recorded at 49 stops and in 35 transect legs. Very social and frequently associating with the Tufted Titmouse and Blue-gray Gnatcatcher.
- Tufted Titmouse -- Abundant and widespread resident of woodland; recorded at 43 stops and in 35 transect legs.
- White-breasted Nuthatch -- Abundant resident of heavily-wooded tracts having mature timber; recorded at 36 stops and in 28 transect legs. Especially numerous in Transect Set V, along wooded lakeshores and in swamp habitats within both Nature Preserves.
- Brown Creeper -- Not found during the survey, but potential habitat is apparently available at many locations in swamp and wooded shoreline having large trees. Four individuals previously recorded within the land holding on 9 June, 1969 (Bohlen 1978).
- Carolina Wren -- Common resident of woodland and woodland edge; recorded at stops 26, 29, 31, 32, 43 and 46, and in 7 transect legs. Frequented log jams along wooded streams, floodplain forest, late-successional fields and dense undergrowth at swamp margins.
- Short-billed Marsh Wren -- Rare migrant in early June; one bird observed and 3 heard calling in dense vegetation of swamp margin between stops 20 and 21 on 2 June.
- Mockingbird -- Uncommon resident found in shade trees of mowed roadsides, residential areas and fencerows and woodland edge; recorded at stops 5 and 38 and in 3 transect legs.
- Gray Catbird -- Fairly common resident of wooded lakeshore, swamp margin and roadsides; recorded at stops 6, 9, 49 and 50, and between stops 20 and 21. A pair and active nest was located in a shade tree (Sycamore) in a picnic area at stop 49.
- Brown Thrasher -- Fairly common resident in understory vegetation at woodlot edges, in fencerows and lakeshore or roadside thickets; recorded at stops 2, 4, 8, 11, 14, 15, 39 and 46, and in 8 transect legs.
- American Robin -- Abundant resident of developed areas; recorded at 20 stops and in 10 transect legs. Preferred shade trees of mowed roadside, picnic areas, and residential and maintenance complexes. Most numerous in Transect Sets I and II.





- Wood Thrush -- Abundant and widespread resident of floodplain forest and swamp; recorded at 32 stops and in 31 transect legs, primarily in extensive tracts of forest. Successful nesting indicated by an increase in numbers of birds during final surveys, particularly at stops 7 and 12, and in Transect Sets IV and V. Preferred woodland having well-developed understory.
- Swainson's Thrush -- Rare migrant in late May; one bird found at stops 6 and 7 on both 20 and 25 May. Another bird heard calling between stops 35 and 36 prior to the survey period.
- Gray-cheeked Thrush -- Rare migrant in late May; one bird recorded at stop 6, and 2 birds recorded between stops 7 and 8 on 20 May. Found in relatively large tracts of swampy floodplain forest.
- Veery -- Rare migrant in late May; one bird recorded at stop 12 on 19 May in wooded lakeshore.
- Eastern Bluebird -- Uncommon resident of shade trees along mowed roadsides and lakeshore; recorded at stop 9 and in transect leg between stops 29 and 30.
- Blue-gray Gnatcatcher -- Abundant and widespread resident of floodplain forest, swamp and forest edge; recorded at 41 stops and in 21 transect legs. Sighted most frequently in middle to upper portions of canopy.
- Loggerhead Shrike -- Rare resident; one bird recorded on power line between stops 29 and 30 on 28 May.
- Starling -- Common resident of residential areas, roadsides, and occasionally open fields and fencerows; recorded at stops 12, 14, 15, 16, 24, 38 and 48, and in 4 transect legs.
- White-eyed Vireo -- Common resident of open woodland, woodland edge and fence-rows; recorded at 25 stops and in 24 transect legs. Most abundant in Transect Set IV, and common in Sets III and V.
- Yellow-throated Vireo -- Common resident of floodplain forest and forest edge recorded at 15 stops and in 18 transect legs. Most abundant in Transect Set IV and common in Sets III and V.
- Solitary Vireo -- Rare migrant in late May; one bird recorded between stops 20 and 21 on 23 May. Found near the ground at the edge of swampy woods.
- Red-eyed Vireo -- Common resident of floodplain forest and occasionally swamp margin; recorded at 19 stops and in 16 transect legs. Most abundant in Transect Sets III and IV, preferring forest with a high diversity of tree species.
- Warbling Vireo -- Common resident of wooded lakeshore and other woodland edges near water; recorded at 21 stops and in 14 transect legs. Particularly numerous in shade trees of mowed roadside and adjacent wooded lakeshore in Transect Sets I and II.



- Black and White Warbler -- Rare migrant in late May; one bird recorded between stops 20 and 21 on 23 May. More common prior to the survey period, especially in the vicinity of stops 7, 10, 17, 21 and 44. Found low to middle height in the tree canopy.
- Prothonotary Warbler -- Abundant and widespread resident of wet floodplain forest and swamp; recorded at 29 stops and in 19 transect legs. Most numerous in Transect Sets I and VI, particularly along wooded lakeshore and in swamp within floodplain forest.
- Golden-winged Warbler -- Rare migrant in late May; 3 birds recorded at a single location between stops 7 and 8 on 20 May. Found in upper canopy of swamp margin within floodplain forest.
- Blue-winged Warbler -- Rare migrant in late May; 2 birds recorded at a single location between stops 7 and 8 on 20 May. Found in upper canopy of swamp margin within floodplain forest, and in association with previous species.
- Tennessee Warbler -- Rare migrant in late May; 2 birds recorded at stop 44 in wooded lakeshore, and 1 bird in swamp margin within floodplain forest between stops 43 and 44, both on 24 May.
- Nashville Warbler -- Rare migrant in late May; one bird recorded at stop 4 on 20 May. Found in shade trees of roadside adjacent to lakeshore, mid-height in the canopy.
- Northern Parula -- Common resident of wet floodplain forest, swamp and along wooded streams; recorded at 12 stops and in 15 transect legs. Most abundant between stops 7 and 8, 20 and 21, 21 and 22, 25 and 30, 26 and 27, and 43 and 44.
- Yellow Warbler -- Common resident of wooded lakeshore and woodland edge near water, and in willows bordering pond near stop 51; recorded at stops 1, 4, 5, 6, 9, 10, 51 and 52, and in 6 transect legs.
- Magnolia Warbler -- Uncommon migrant in late May and early June; recorded on 3 occasions from 19 May - 5 June. One bird recorded at stop 51, and single birds recorded between stops 9 and 10, and 35 and 36.
- Black-throated Blue Warbler -- Rare migrant in late May; 2 birds recorded in transect leg between stops 7 and 8 on 20 May, and one bird recorded on 25 May at stop 6. Both found in wet floodplain forest.
- Yellow-rumped Warbler -- Uncommon migrant in late May and early June; 4 birds recorded at stop 28 on 28 May, and one bird recorded between stops 21 and 22 on 2 June. Found in wet floodplain forest and swamp margin.
- Cerulean Warbler -- Uncommon resident of wet floodplain forest and forest edge near open water or streams; recorded at stop 27 and in transect legs between stops 20 and 21, 21 and 22, 28 and 29, and 43 and 44.
- Blackburnian Warbler -- Uncommon migrant in late May; one bird recorded at stop 6 on 25 May, 2 birds recorded between stops 26 and 27 on 28 May, and 2 birds recorded between stops 43 and 44 on 24 May. Found high in the forest canopy near water, such as slough or stream.





- Yellow-throated Warbler -- Common resident of cypress-tupelo swamp and occasionally wet floodplain forest; recorded at stops 47, 51, 52, 53, 54 and 55, and in 5 transect legs. Found high in the canopy, preferring cypress trees.
- Bay-breasted Warbler -- Rare migrant in late May; 3 birds recorded on 25 May between stops 7 and 8. Found high in the canopy of wet floodplain forest.
- Blackpoll Warbler -- Uncommon migrant in late May; 3 birds recorded at stop 7 and one bird between stops 7 and 8 on 20 May, and 2 birds recorded between stops 7 and 8 on 25 May.
- Pine Warbler -- Rare migrant in late May; 2 birds recorded at stop 43, and one bird recorded between stops 42 and 43 on 24 May. Found in mesic floodplain forest having a high diversity of tree species and dense understory.
- Palm Warbler -- Uncommon migrant in late May. Four birds recorded: one at stop 6 on 25 May, one between stops 26 and 27 on 28 May, and 2 birds at stop 10 on 30 May. Found in well-developed understory near water in floodplain forest.
- Ovenbird -- Uncommon migrant in early June. Four birds recorded: one each at stops 31 and 36 on 1 June, and 2 birds recorded at stop 43 on 8 June. Found close to the ground in dense understory of floodplain forest.
- Louisiana Waterthrush -- Rare migrant; one bird recorded in the transect leg between stops 34 and 35 on 1 June. Found in dense undergrowth of slough margin in floodplain forest. Possibly more abundant in May, as several birds were found prior to survey period along Lake Cr. near stops 27 and 29.
- Kentucky Warbler -- Fairly common resident in extensive floodplain forest; recorded at 21 stops and in 16 transect legs. Found in lower vegetative stratum.
- Common Yellowthroat -- Abundant and widespread resident of most woodland, woodland edge, fencerows and roadsides, usually not far from water; recorded at 39 stops and in 27 transect legs, and most numerous in Transect Sets II, III, IV and VII.
- Yellow-breasted Chat -- Common resident of roadside thickets and forest edge; recorded at 17 stops and in 15 transect legs.
- Hooded Warbler -- Uncommon resident of wet floodplain forest and swamp; recorded at stops 22, 47 and 48, and between stops 22 and 23. Found low to mid-height in forest having well-developed understory, and in cypress-tupelo swamp with little to no understory.
- Wilson's Warbler -- Rare migrant in late May; one bird recorded at stop 44 on 24 May, and 3 birds recorded between stops 7 and 8 on 25 May. Found in dense understory vegetation at floodplain forest margins.
- Canada Warbler -- Uncommon resident of extensive forest; recorded at stops 31 and 34, and in transect legs between stops 22 and 23, and 27 and 28. Fairly common migrant prior to the survey period, especially in Transect Sets IV and V.



American Redstart -- Fairly common resident of wet floodplain forest, wooded lakeshore, streams, forest and swamp margins near water; recorded at 9 stops and in 13 transect legs. Found in mid to upper canopy.

House Sparrow -- Common resident near residential and recreation areas, and occasionally along roadsides; recorded at stops 2, 3, 5, 30, 38, 48, 49 and 52, and in 4 transect legs. Has also adapted to cypress-tupelo swamp, where it nests in dead tree cavities.

Bobolink -- Rare migrant by 19 May, when 3 birds were recorded between stops 9 and 10; more abundant in this location prior to the survey period. Most abundant in wet, weedy fields before plowing.

Eastern Meadowlark -- Abundant resident of open fields; recorded at 17 stops and in 20 transect legs. Most numerous in Transect Sets I, III and VI, especially prior to plowing.

Red-winged Blackbird -- Abundant and widespread resident of open fields, lakeshore, and forest margins; recorded at 28 stops and in 33 transect legs. Concentrated near buttonbush thickets, in which they nested.

Orchard Oriole -- Uncommon resident; recorded at stops 4, 46 and 47. Found along streams and lakeshore, and in shade trees in recreation areas.

Northern Oriole -- Common resident; recorded at 11 stops and in 6 transect legs. Preferred shade trees of mowed roadside bordering lakeshore, picnic areas, and woodlots near ponds.

Common Grackle -- Abundant and widespread resident; recorded at 29 stops and in 23 transect legs. Found in most habitats, but especially numerous in open, swampy forest and wooded lakeshore.

Brown-headed Cowbird -- Abundant and widespread resident; recorded at 34 stops and in 29 transect legs. Found in most habitats, from open fields to dense floodplain forest, but less common in swamp.

Scarlet Tanager -- Fairly common resident of floodplain forest, wooded streams and swamp margin; recorded at stops 5, 7, 22, 34, 39 and 54, and in 6 transect legs.

Summer Tanager -- Rare resident; one male recorded twice between stops 12 and 13, in fencerow trees adjacent to floodplain forest.

Cardinal -- Abundant and widespread resident of woodland and woodland edge; recorded at all stops and transect legs. Not found in open fields, but vocalizations audible some distance from woodland.

Rose-breasted Grosbeak -- Rare resident; recorded at stops 39 and 51, in woodland edge near pond.

Blue Grosbeak -- Rare migrant in late May; one male recorded in fencerow between stops 13 and 14 on 30 May.



Indigo Bunting -- Abundant and widespread resident of woodland edge and roadsides; recorded at 42 stops and in 37 transect legs.

American Goldfinch -- Fairly common resident of floodplain forest and swamp margins, lakeshore and in willows around ponds; recorded at stops 4, 12, 16 and 51, and in transect legs between stops 12 and 13, 19 and 20, and 20 and 21.

Rufous-sided Towhee -- Common and widespread resident of fencerows and woodland edge; recorded at 11 stops and in 15 transect legs.

Vesper Sparrow -- Rare migrant in late May; one male recorded in roadside vegetation between stops 14 and 15 on 19 May.

Chipping Sparrow -- Fairly common resident; recorded at stops 30, 46, 47, 48 and 49, and between stops 26 and 27, and 29 and 30. Found along roadsides, in fencerows, picnic areas, and in vegetation bordering causeways.

Field Sparrow -- Common resident of open fields and fencerows, especially prior to plowing of fields; recorded at 18 stops and in 22 transect legs.

Song Sparrow -- Uncommon resident; recorded at stops 30, 51 and 52, and in transect legs between stops 12 and 13, 13 and 14, and 29 and 30. Found in fencerows, forest margins, willows around ponds, and along roadsides.





### Habitat Accounts

The HLCA land holding was divided into 6 Community Types and 10 habitats. These are presented in Table 1, along with the census stops occurring in each habitat. This may be somewhat misleading, as more than a single habitat type usually occurred in the vicinity of each census stop. For example, stop 46 was a picnic area adjacent to swamp on the south and a weedy field on the north; birds heard in all 3 habitats were recorded at that stop. Similarly, most roadsides bordered woodland and cropland.

Table 2 presents estimates of bird populations by habitat. This is followed by a concise description of each habitat and its use by various bird species.



Table 1. Community Types and associated habitats within the HLCA land holding. Included are the Census Stops occurring in each habitat.

Community Type	Habitat	Census Stops
Surface Water	1 Impoundment	47, 48, 53
	2 Pond	51
	3 Stream	17, 29
Wetland	4 Swamp	50, 52, 54, 55
Forest	5 Floodplain Forest	6, 7, 10, 12, 13, 21, 22, 23, 24, 26, 27, 28, 31, 32, 33, 34, 35, 36, 37, 39, 40, 42, 43, 44
Cropland	6 Cropland	2, 5, 8, 11, 14, 15, 18, 19, 20, 25, 30, 41
Forageland	7 Grass and Clover	45
Developed Land	8 Picnic Areas	46, 49
	9 Roadsides/Fencerows	1, 3, 4, 9, 16
	10 Residential/Main-tenance Complexes	38



Table 2. Estimated bird populations by habitat. Habitats are indicated by numbers given in Table 1. The letters A, C, U and R indicate abundance as described in the Species Account section. Migrants are indicated by an M. A \* indicates found at the edge of that habitat.

SPECIES	HABITATS									
	1	2	3	4	5	6	7	8	9	10
Great Blue Heron	U	U								
Green Heron	C	C	C	U	U					
Little Blue Heron	U	C		R						
Great Egret	R	U								
Yellow-crowned Night Heron		U		U*	U*					
Canada Goose		C				U				
Mallard	C	C								
Blue-winged Teal		R								
Wood Duck	C	C	U	C	C					
Hooded Merganser		R								
Mississippi Kite					R		R			
Red-tailed Hawk					C	U	U			
Red-shouldered Hawk				C	C	U	U			
Broad-winged Hawk					R					
American Kestrel					R					
Bobwhite						C			C	
Killdeer		C				C				
Mourning Dove						U			C	C
Yellow-billed Cuckoo				C	A			U	C	U
Screech Owl					U					
Great-horned Owl					U					
Barred Owl				C	C					
Common Nighthawk						R				
Chimney Swift	C	C		U	U	C	C	C	U	C
Ruby-throated Hummingbird					C		U			
Belted Kingfisher	U	U								
Common Flicker				U	C					
Pileated Woodpecker				C	C					
Red-bellied Woodpecker				C	C			C	U	U
Red-headed Woodpecker			C	C	C				U	U





Table 2 Cont.

SPECIES	HABITATS									
	1	2	3	4	5	6	7	8	9	10
Hairy Woodpecker					C					
Downy Woodpecker			C	C	A	A		U	U	U
Eastern Kingbird	C	U		C		C	U			
Great Crested Flycatcher			C	U	C				U	
Yellow-bellied Flycatcher					M					
Acadian Flycatcher			A	A	A					
Least Flycatcher			M		M					
Eastern Wood Pewee			C	C	A					
Horned Lark						M				
Tree Swallow	U	U					U			
Rough-winged Swallow	C	U		U	U	C	U			
Barn Swallow						U				C
Purple Martin	U			U		U				C
Blue Jay	U	U	U	U	C			U		C
Common Crow	U	U	U	C	C	A	C	U	C	C
Fish Crow	R									
Carolina Chickadee	U	U	C	A	A			C	U	C
Tufted Titmouse	U	U	C	A	A			C	U	C
White-breasted Nuthatch	U	U	C	A	C			U		U
Carolina Wren			C	U	C			U		
Short-billed Marsh Wren				M						
Mockingbird								U	U	U
Gray Catbird					C			C	U	U
Brown Thrasher					C*			U	C	U
American Robin								C	C	C
Wood Thrush			C	C	C					
Swainson's Thrush				M	M					
Gray-cheeked Thrush				M	M					
Veery					M					
Eastern Bluebird								U	U	
Blue-gray Gnatcatcher			U	C	A			U		
Loggerhead Shrike									R	
European Starling	U		U			U		C	C	C
White-eyed Vireo					C*				C	
Yellow-throated Vireo					C					
Solitary Vireo					M					



Table 2 Cont.

SPECIES	HABITATS									
	1	2	3	4	5	6	7	8	9	10
Red-eyed Vireo				U	C			U		
Warbling Vireo	C*	C						C	U	
Black and White Warbler					M					
Prothonotary Warbler			C	A	C					
Golden-winged Warbler				M						
Blue-winged Warbler				M						
Tennessee Warbler					M					
Nashville Warbler									M	
Northern Parula			U	C	C					
Yellow Warbler		C						C	C	
Magnolia Warbler					M					
Black-throated Blue Warbler				M						
Yellow-rumped Warbler				M	M					
Cerulean Warbler			C	C	C					
Blackburnian Warbler				M	M					
Yellow-throated Warbler				C						
Bay-breasted Warbler				M	M					
Blackpoll Warbler				M	M					
Pine Warbler				M	M					
Palm Warbler			M		M					
Ovenbird					M					
Louisiana Waterthrush			M		M					
Kentucky Warbler					C					
Common Yellowthroat	C*	C	C	U*	C*			C	C	C
Yellow-breasted Chat					C*				C	
Hooded Warbler				U	U					
Wilson's Warbler					M					
Canada Warbler					U					
American Redstart			U	U	C					
House Sparrow				U				C	C	C
Bobolink						M				
Eastern Meadowlark						C	A		C	
Red-winged Blackbird	C*	C			C*	A	A	C	C	C
Orchard Oriole					U*			C	U	U
Northern Oriole								A	U	C
Common Grackle	C			C	C	U		C	C	C



Table 2 Cont.

SPECIES	HABITATS									
	1	2	3	4	5	6	7	8	9	10
Brown-headed Cowbird	C			U	C	A	C	C	C	C
Scarlet Tanager			C	U	C			U		
Summer Tanager					R*					
Cardinal	U	C	C	C	A			C	C	C
Rose-breasted Grosbeak									R*	
Blue Grosbeak									R	
Indigo Bunting	C*	C	C		C*		A	C	A	C
American Goldfinch	C*	C	U	U*	C*			C	U	C
Rufous-sided Towhee					C*				C	
Vesper Sparrow									M	
Chipping Sparrow	C*								C	U
Field Sparrow						U	C			
Song Sparrow		C			U*			U	C	U





Impoundment -- This habitat included nonwooded portions of Horseshoe Lake, and encompassed about 18% of the land holding. Mostly open water with isolated cypress trees, vegetation was restricted primarily to unshaded shorelines, decaying logs, and two causeways which dissected the lake. Areas of shallow water supported dense emergent vegetation, principally Nelumbo lutea; dense thickets of Cephalanthus occidentalis occurred in some locations.

Bird species common to this habitat included: Mallard and Wood Duck, particularly in areas of dense vegetation which provided cover and dry resting sites; Red-winged Blackbird, especially abundant in Cephalanthus thickets in which they nested; Eastern Kingbird, Rough-winged Swallow, and Chimney Swift, which fed at or above the water surface; and Green Heron. Less common were: Belted Kingfisher, Tree Swallow, Barn Swallow and Purple Martin, which fed at or above the water surface; Great Blue Heron and Little Blue Heron, found perched on logs and foraging among dense emergent vegetation. The Fish Crow was a rare species in association with open water, but was more commonly encountered along wooded shorelines.

Ponds -- This habitat, which encompassed less than 1% of the land holding, included permanent shallow ponds and temporary pools in fields. Permanent ponds became covered with vegetation by summer, principally Nelumbo lutea and Lemna sp.. A large pond adjacent to the inland Nature Preserve was bordered by Salix nigra. The transient pools were characterized by a diversity of wetland plants; most were plowed as they became dry.

Ponds provided important foraging habitat for a variety of wading birds and waterfowl, some of which were apparently restricted to this habitat. Common species included: Green Heron, Little Blue Heron, Mallard and Wood Duck. Less common were: Great Blue Heron, Yellow-crowned Night Heron, Great Egret and Canada Goose. Rare or unusual species were: Hooded Merganser and Green-winged Teal.



Other species commonly associated with ponds included: Killdeer, Red-winged Blackbird, Yellow Warbler, Prothonotary Warbler, American Goldfinch, Common Grackle, Common Yellowthroat and Indigo Bunting.

One particular location (the field between stops 19 and 20) was notable for the abundance of Cociniforms, and for its use by Mississippi Kites. Due to poor drainage, most of the field remained wet and uncultivated throughout this study; flooded areas supported a diversity of wetland plants and weeds. These conditions favored insect populations, and were likely a major factor influencing selection of adjacent woods by Kites for nesting; they fed extensively over the field and landed on wet ground to capture small frogs and toads.

Streams -- This habitat included Lake Creek and its tributaries, and a slough in Section 11; essentially all streambanks were wooded.

Bird species commonly found along streams included: Green Heron, Acadian Flycatcher, Prothonotary Warbler, and most species common in woodland habitats. Less common were: Wood Duck, Red-shouldered Hawk, Great Crested Flycatcher, Carolina Wren, Northern Parula, American Redstart and Scarlet Tanager.

Swamp -- This habitat, which encompassed about 8% of the land holding, may be divided into 3 sub-types, each having a characteristic bird population:

- 1) permanent water - cypress-tupelo community within the lake channel
- 2) seasonal water - cypress swamp within floodplain forest containing a diversity of other water-tolerant tree species
- 3) seasonal water - dead-tree swamp having dense buttonbush understory

Bird species common in swamps (followed by a sub-type number if restricted to a particular sub-type) included:

Wood Duck <sup>1,2</sup>	Red-headed Woodpecker
Red-shouldered Hawk <sup>2</sup>	Downy Woodpecker <sup>1,2</sup>
Yellow-billed Cuckoo <sup>1,2</sup>	Acadian Flycatcher <sup>1,2</sup>
Barred Owl <sup>1,2</sup>	Eastern Wood Pewee <sup>1,2</sup>
Common Flicker	Carolina Chickadee <sup>1,2</sup>
Pileated Woodpecker <sup>1,2</sup>	Tufted Titmouse <sup>2</sup>
Red-bellied Woodpecker <sup>1,2</sup>	White-breasted Nuthatch <sup>1,2</sup>



Wood Thrush<sup>1,2</sup>  
 Prothonotary Warbler  
 Northern Parula<sup>2</sup>

Cerulean Warbler<sup>2</sup>  
 Yellow-throated Warbler<sup>1,2</sup>  
 Common Grackle

Less common species were: Hooded Warbler<sup>1,2</sup>, Yellow-crowned Night Heron<sup>2</sup>, and House Sparrow<sup>1</sup>. Some migrants found only in this habitat were: Golden-winged Warbler<sup>2</sup>, Blue-winged Warbler<sup>2</sup>, Black-throated Blue Warbler<sup>2</sup> and Short-billed Marsh Wren.

Floodplain Forest -- Encompassing the greatest area, 51% of the land holding, this habitat may be divided into 3 sub-types:

- 1) wet - both the diversity of trees and the ground cover restricted by seasonal flooding and poor drainage
- 2) wet-mesic - a high diversity of bottomland tree species, well-developed understory and ground cover
- 3) mesic - restricted to portions of the Nature Preserves having tree species characteristic of both bottomland and mesic upland forest, and a dense understory dominated by Aesculus discolor.

Common bird species of floodplain forest (followed by a sub-type number if restricted to a particular sub-type) included:

Red-shouldered Hawk  
 Yellow-billed Cuckoo  
 Barred Owl  
 Ruby-throated Hummingbird<sup>2,3</sup>  
 Common Flicker  
 Pileated Woodpecker  
 Red-bellied Woodpecker  
 Red-headed Woodpecker  
 Hairy Woodpecker  
 Downy Woodpecker  
 Acadian Flycatcher  
 Eastern Wood Pewee  
 Blue Jay  
 Common Crow

Carolina Chickadee  
 Tufted Titmouse  
 White-breasted Nuthatch  
 Carolina Wren  
 Wood Thrush  
 Blue-gray Gnatcatcher  
 Yellow-throated Vireo  
 Red-eyed Vireo  
 Kentucky Warbler  
 American Redstart  
 Common Grackle  
 Brown-headed Cowbird  
 Cardinal

Less common species were:

Red-tailed Hawk  
 Great-horned Owl  
 Great Crested Flycatcher  
 Northern Parula<sup>1</sup>

Cerulean Warbler<sup>1</sup>  
 Hooded Warbler<sup>1,2</sup>  
 Canada Warbler<sup>2</sup>  
 Scarlet Tanager

Uncommon or rare species were: Mississippi Kite, Broad-winged Hawk, Screech Owl, Fish Crow, and Summer Tanager.





Cropland -- This habitat, which encompassed about 21% of the land holding, included all fields with few exceptions. Principle crops were corn, soybeans, winter wheat, milo and sunflower. This habitat generally had the lowest diversity of bird species; most abundant species were primarily those considered as pests due their flocking behavior and potential for crop depredation.

Common species included: Killdeer, Chimney Swift, Barn Swallow, Common Crow, Red-winged Blackbird, Common Grackle and Brown-headed Cowbird. Less common were:

Canada Goose	Rough-winged Swallow
Mallard	Starling
Bobwhite	Eastern Meadowlark
Mourning Dove	Indigo Bunting
Eastern Kingbird	Field Sparrow
Horned Lark	

Forageland -- This habitat, which encompassed about 1% of the land holding, was restricted to areas left fallow or planted to grass and clover; only one field (at stop 45) and portions of the field between stops 19 and 20 (discussed under Pond habiat) qualified, as all others were plowed for cropland. However, because a number of fields were fallow prior to plowing, bird species found there were included in this section.

Common species included:

Chimney Swift	Eastern Meadowlark
Ruby-throated Hummingbird	Red-winged Blackbird
Eastern Kingbird	Indigo Bunting
Barn Swallow	Field Sparrow
Common Crow	

Less common were: Killdeer, Common Grackle, Brown-headed Cowbird and American Goldfinch. The Bobolink was a common migrant in this habitat in early May.

Picnic Areas/Roadsides and Fencerows/Residential-Maintenance Complexes -- These habitats, which together encompassed about 1% of the land holding, may be considered together because their bird populations were very similar. Vegetation consisted of scattered or evenly-spaced shade trees and a grass ground cover maintained by mowing. Most areas included or were adjacent to fencerows, hedges,



or forest edge having dense shrubs and/or vines.

Common species included:

Mourning Dove  
Yellow-billed Cuckoo  
Red-bellied Woodpecker  
Red-headed Woodpecker  
Blue Jay  
Common Crow  
Carolina Chickadee  
Tufted Titmouse  
Gray Catbird  
American Robin  
Starling

White-eyed Vireo  
Common Yellowthroat  
Yellow-breasted Chat  
House Sparrow  
Northern Oriole  
Brown-headed Cowbird  
Cardinal  
Indigo Bunting  
American Goldfinch  
Rufous-sided Towhee

Less common were:

Barred Owl  
Common Flicker  
Pileated Woodpecker  
Barn Swallow  
Purple Martin  
Mockingbird  
Brown Thrasher

Blue-gray Gnatcatcher  
Warbling Vireo  
Yellow Warbler  
Orchard Oriole  
Chipping Sparrow  
Song Sparrow

Uncommon or rare species were: American Kestrel, Eastern Bluebird, Loggerhead Shrike, and Rose-breasted Grosbeak.

Recommendations

1. Enhance the availability and diversity of nonwooded habitats. This would require the release of some land from farming. Most all cleared ground is cultivated because primary management objectives emphasize food crop production for wintering Canada geese. This severely restricts the use of these areas by non-target species, and probably accounts for the absence of several species of sparrows. Needed are more fallow or early-successional fields, open, marshy wetlands and/or additional green pasture. These would provide enhanced foraging opportunities for all of the state-endangered species recorded as well as nesting and feeding habitat for many other nongame species. In particular, the field between stops 19 and 20 should be left fallow during the growing season to 1) provide a reliable food source for Mississippi Kites and insure their continued use of this location for nesting, and 2) benefit migrating shorebirds and



transient and/or nesting herons, egrets and waterfowl.

2. Maintain the present integrity of forested tracts by avoiding developments which might induce excessive fragmentation. Relatively large, unbroken tracts of forest are preferred by Red-tailed and Red-shouldered hawks, Great-horned Owls and many species of songbirds.
3. Avoid land use practices which would necessitate draining of natural wetlands, either forested or nonwooded, as these are becoming increasingly scarce in southern Illinois.
4. Although no heron rookeries were encountered during this study, wooded portions of the lake channel appeared to offer good potential nesting sites. However, as the entire lake presently receives high visitor usage all summer, boating and fishing activities would need to be restricted within designated portions of the lake to induce colonization by disturbance-sensitive species.
5. Siltation and the resultant encroachment of vegetation into water channels needs to be controlled to halt further size reduction of the lake environment. However, it is recommended that some locations having dense emergent vegetation remain undisturbed to provide cover and food for waterfowl, herons and egrets.
6. Develop a master plan for the site which incorporates these recommendations into current management policies. This land holding of over 10,000 acres, currently managed for a few selected game species, provides the state with a unique opportunity to enhance a wide variety of compatible game and nongame wildlife populations. It is hoped that this study will be used to help realize this potential.

#### Problems and Benefits

The standard technique employed in this survey enabled efficient sampling of a large area, and provided baseline data useful in making sound management decisions. The use of qualitative census stops was particularly beneficial for



sampling habitats which could not be included within transect routes.

More time should be allotted for preliminary transect scouting and recording vegetation, and to search for rare species and unusual habitats or special features of habitats. If it is important that censuses be concentrated during late May and early June, they need to begin about the second week in May to account for unfavorable weather during the survey period; this allows only one week for advance preparations, which is not nearly enough time.

Because the data may be interpreted in a number of ways, specific guidelines regarding data analysis would enhance uniformity of results submitted to the IDOC. Much of the information inferred from the data is necessarily subjective; however, this could be controlled to some extent if all researchers followed standardized methods of analysis.

Data obtained from censusing transect legs was largely influenced by the time required to navigate certain habitats; bird densities appeared much greater in areas which took longer to traverse. For example, transect legs through swamp could rarely be traversed within 10 minutes; the longer walking time through deep water provided greater opportunity to observe and hear species than when walking through dense forest, which required a very fast pace and less time to record. This needs to be considered when comparing results obtained at census stops versus transect legs.

Correlating species recorded at each census stop with stop-site vegetation may be very misleading, as the distance each species' songs and calls could be detected varied between habitats. It was difficult (and probably somewhat inaccurate) to evaluate population densities and habitat associations based on vegetative synopses at stop-sites. Additionally, vegetation synopses reflect the time of the season at which they were completed, so that changes in vegetative cover and corresponding changes in bird species utilization are not represented.





## Literature Cited

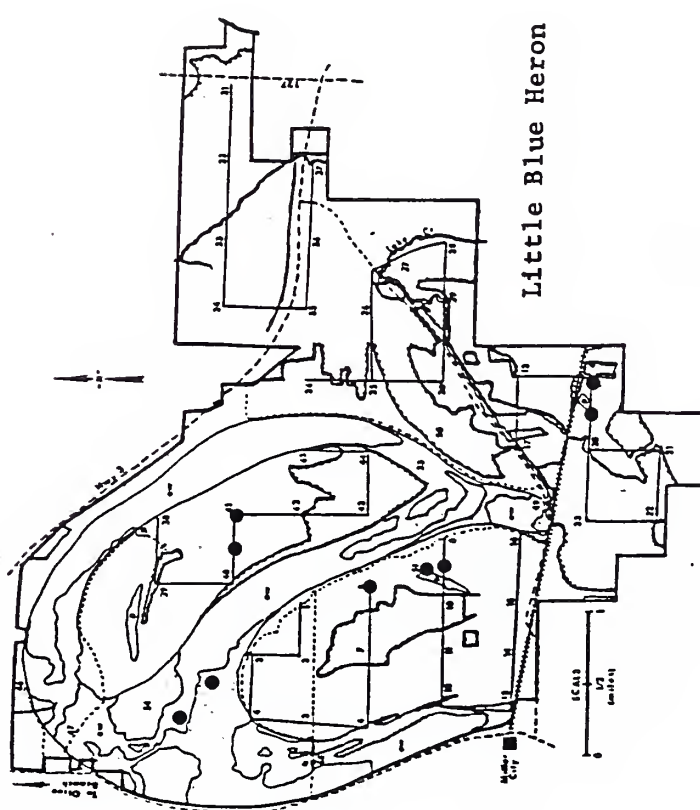
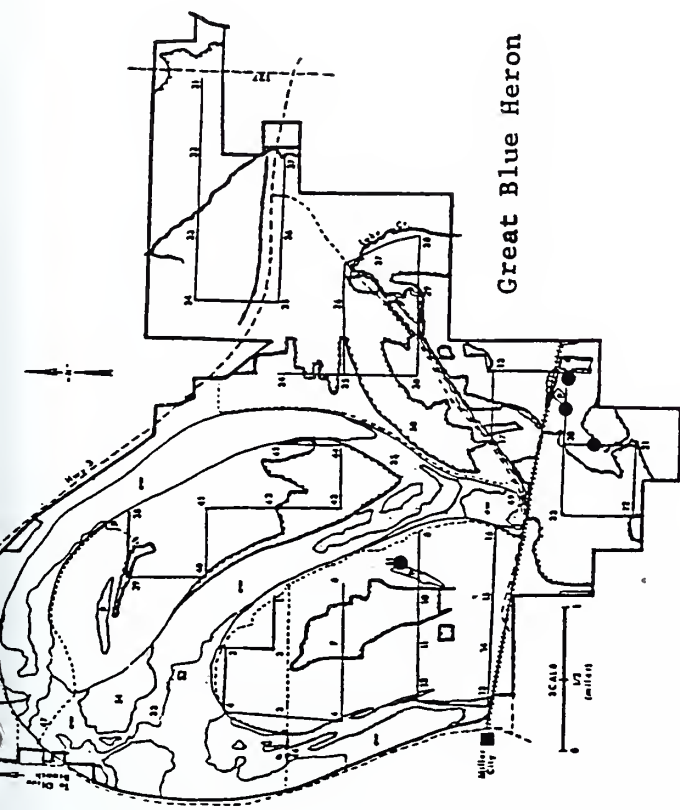
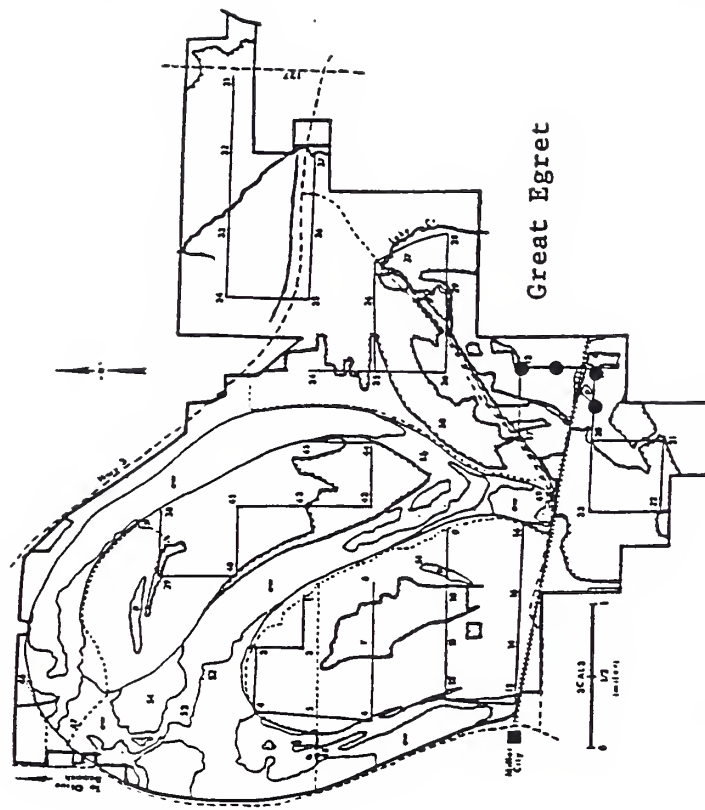
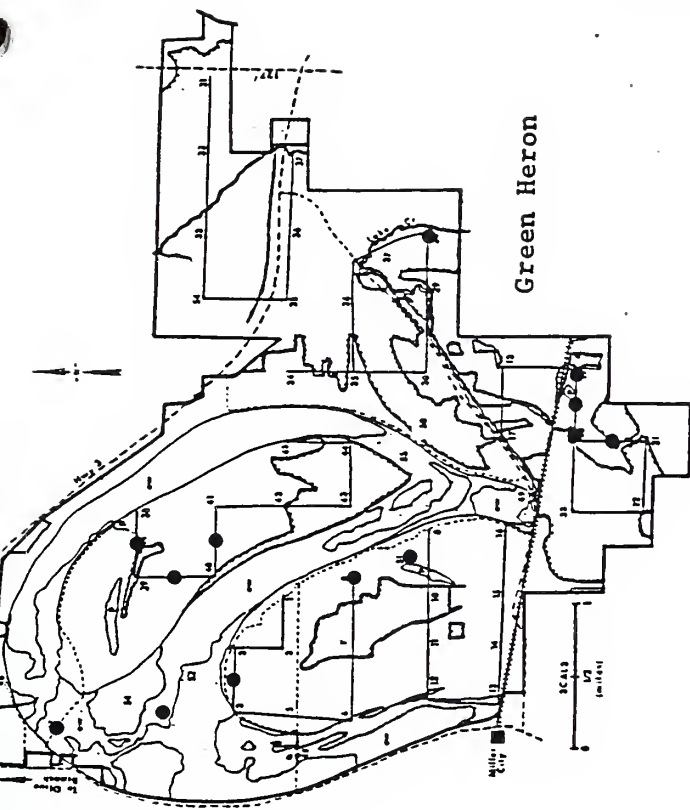
- Bellrose, F. C. 1978. Ducks, geese and swans of North America. Stockpole Books, Harrisburg, Pennsylvania. 540 pp.
- Bohlen, H. D. 1978. An annotated check-list of the birds of Illinois. Ill. State Mus. Pop. Sci. Ser., Vol. IX, Springfield, Ill. 154 pp.
- Mohlenbrock, R. H. 1975. Guide to the vascular flora of Illinois. Southern Illinois University Press, Carbondale. 494 pp.



## APPENDIX A

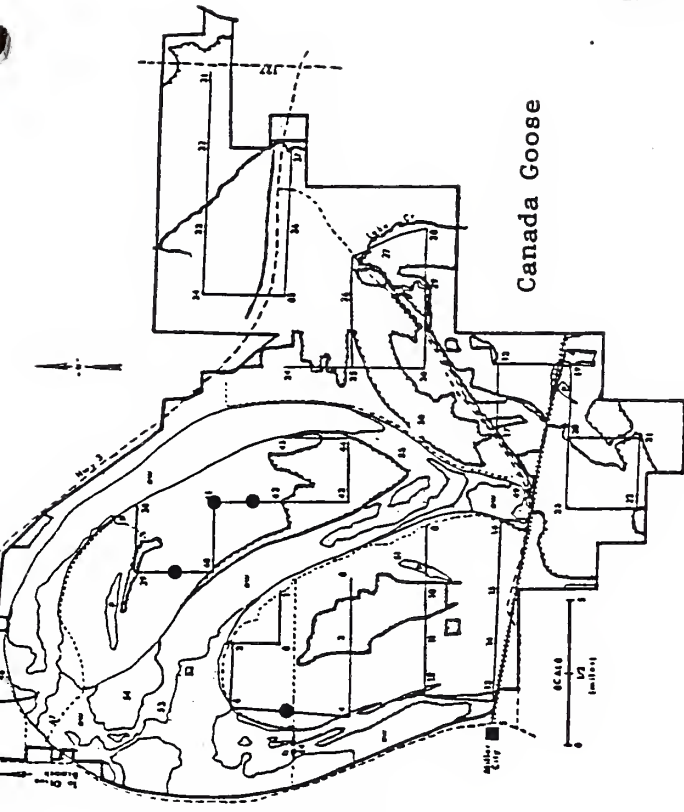
The following distribution maps show the census stops and transect legs in which each species was recorded. In the case of species having an extremely widespread distribution, open circles (o) were used to indicate census stops and transect legs in which the species was not recorded to reduce cluttering. Species recorded at all census stops and transect legs are indicated by the word All after the name.



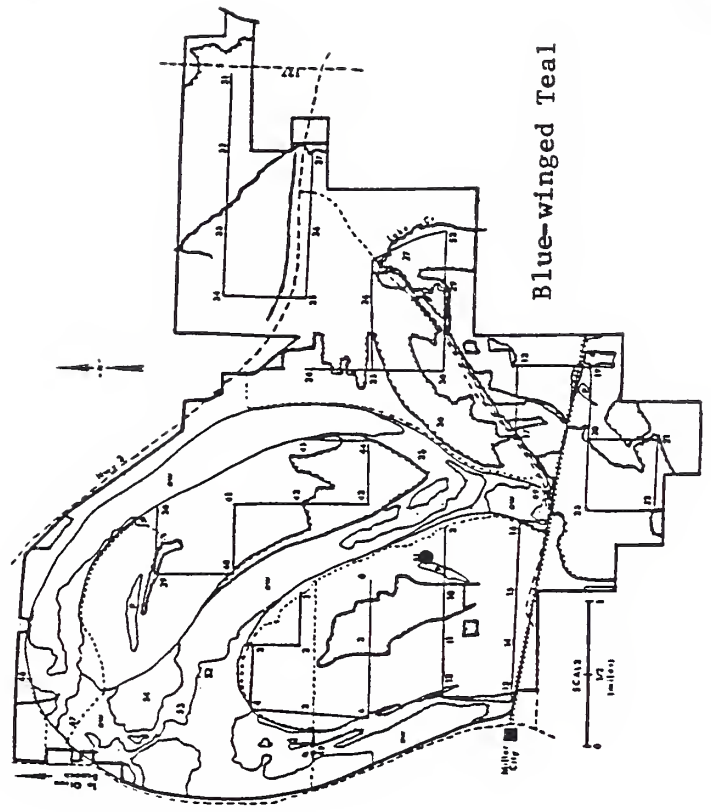




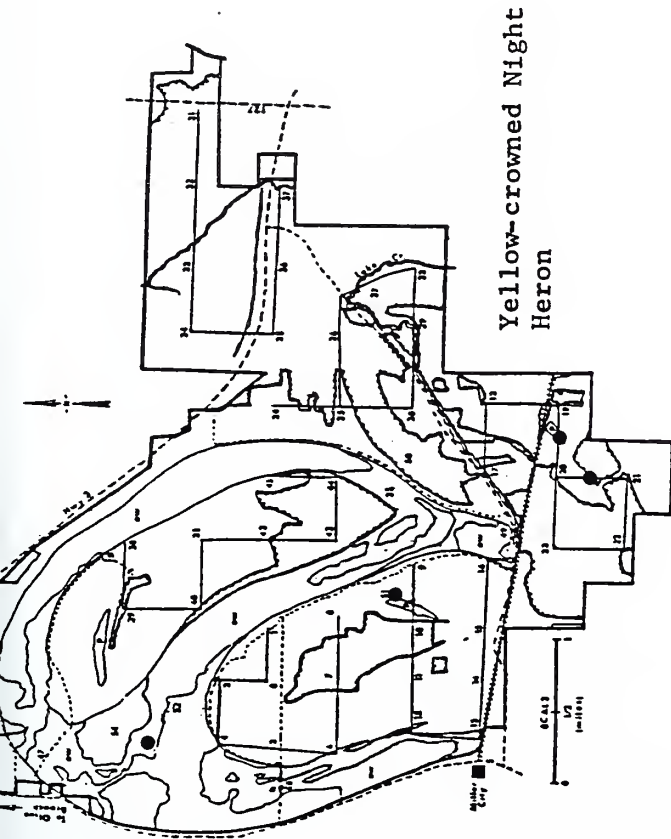




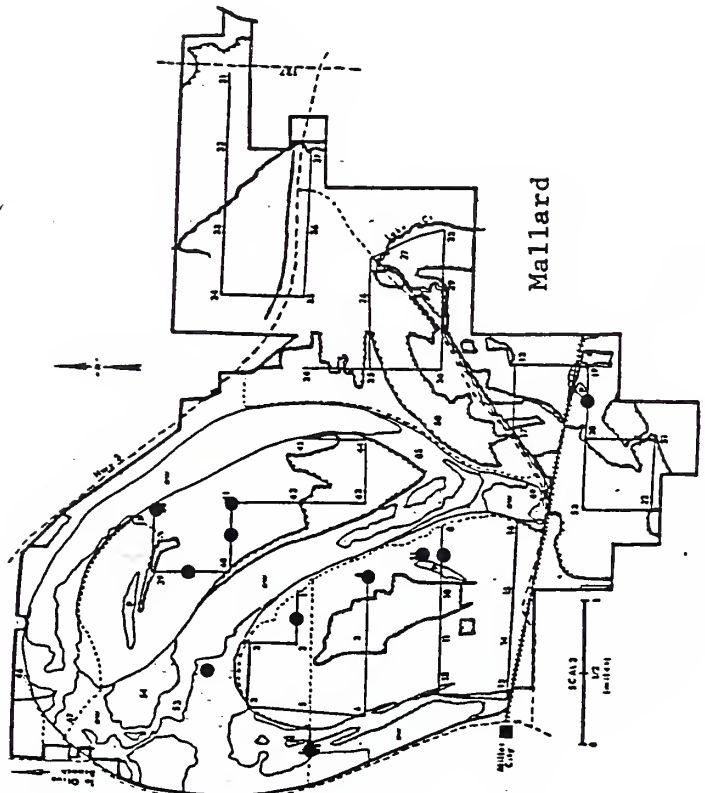
Canada Goose



Blue-winged Teal

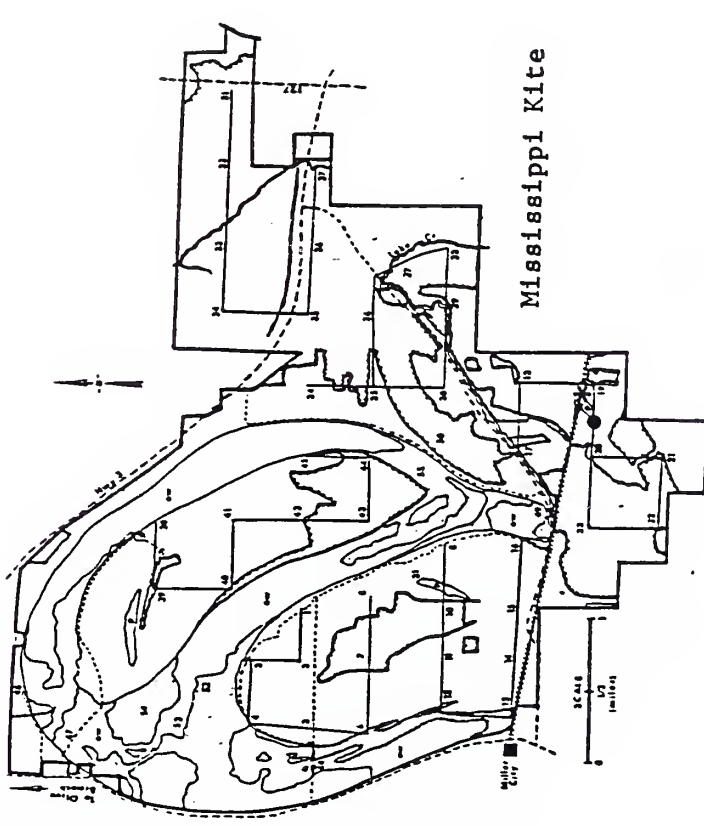
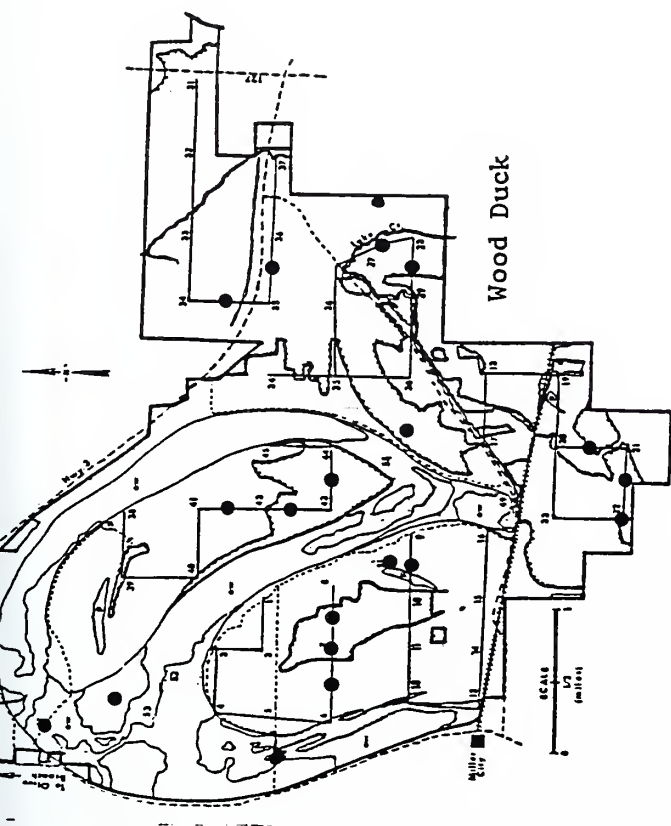
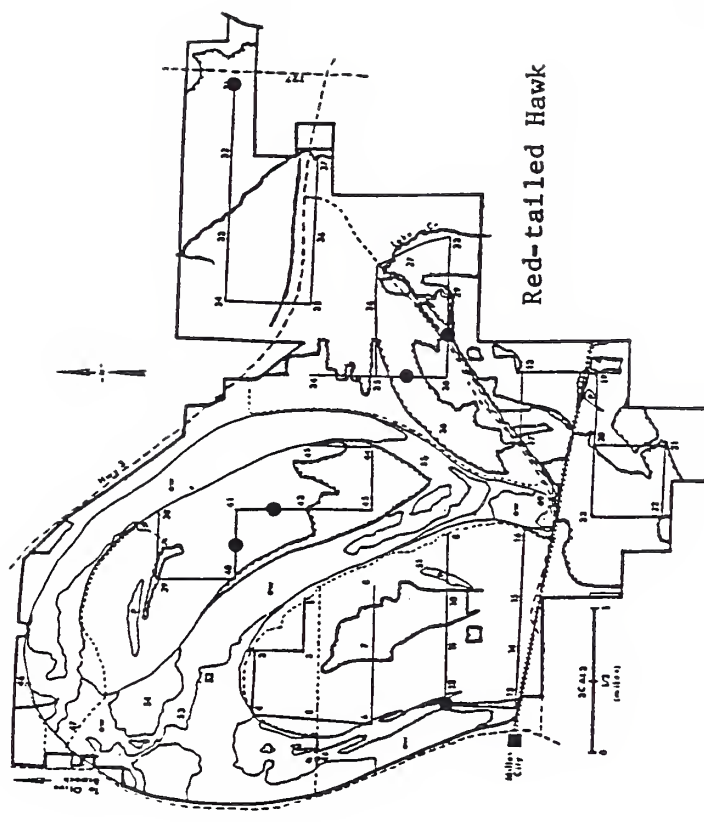
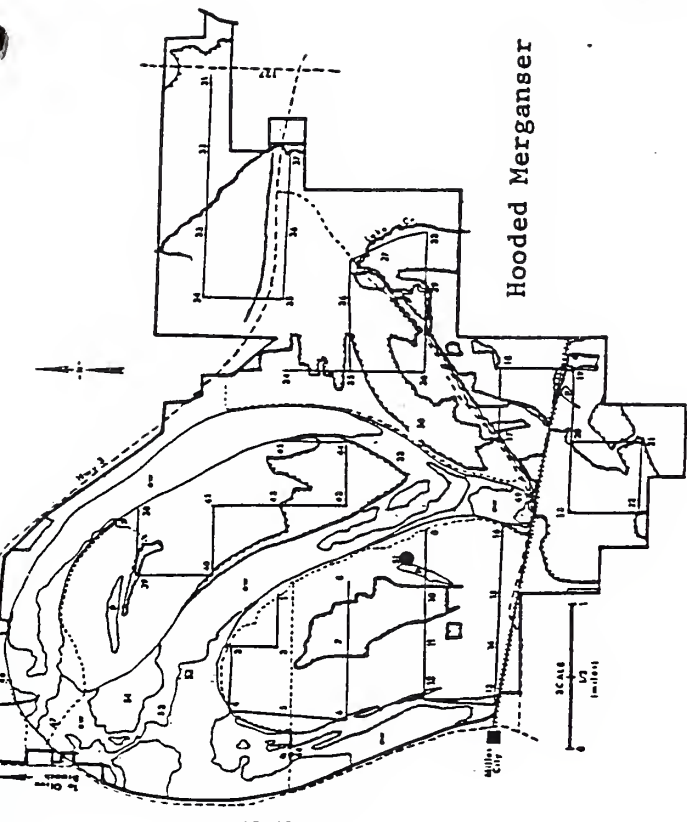


Yellow-crowned Night Heron

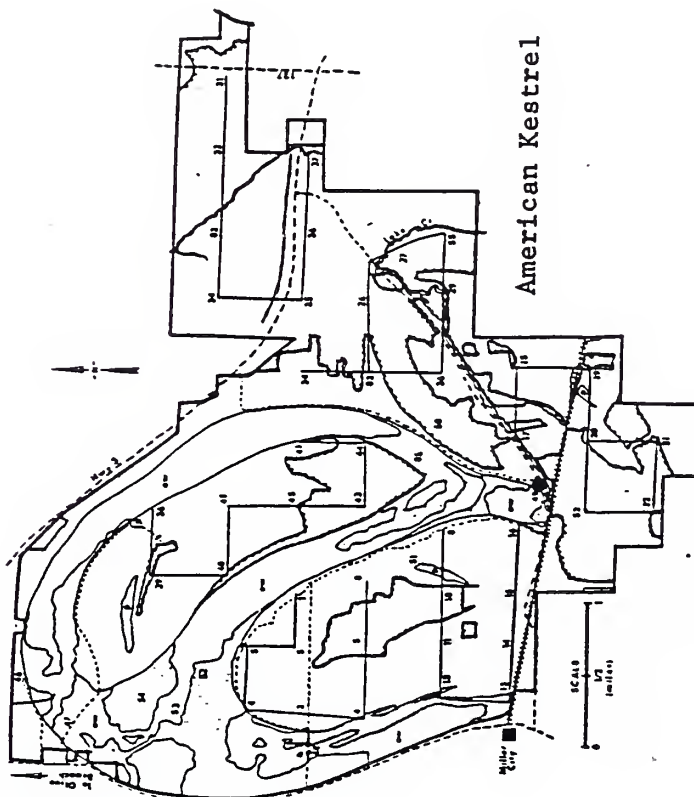
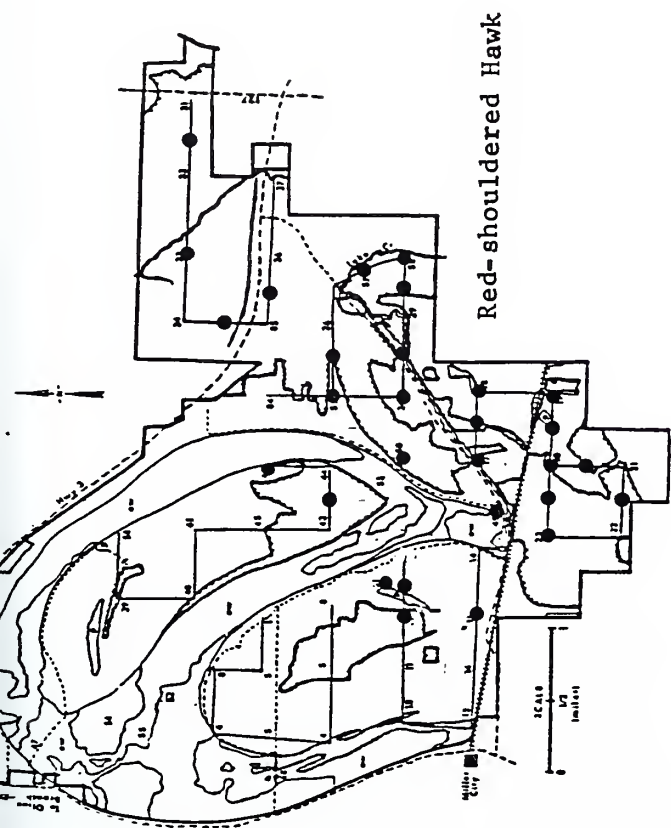
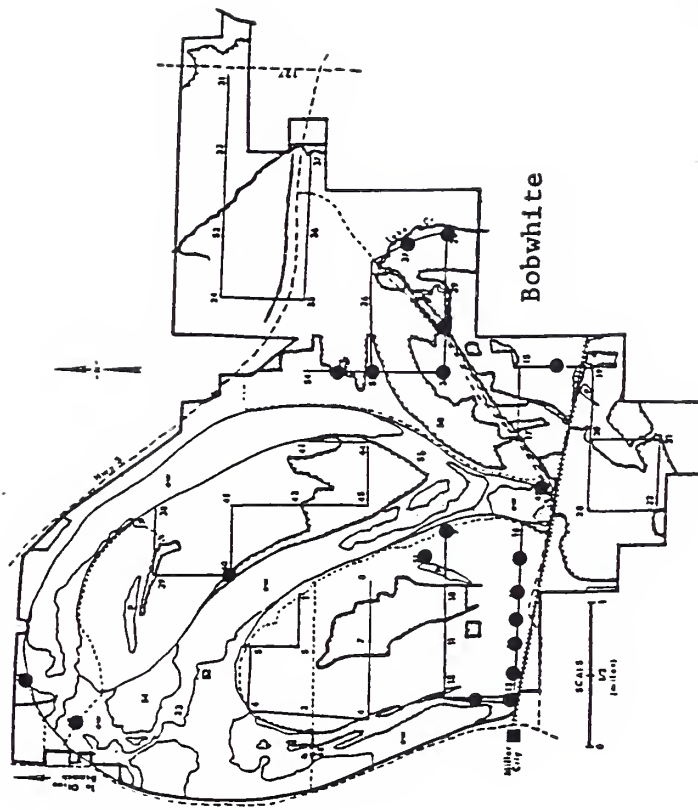
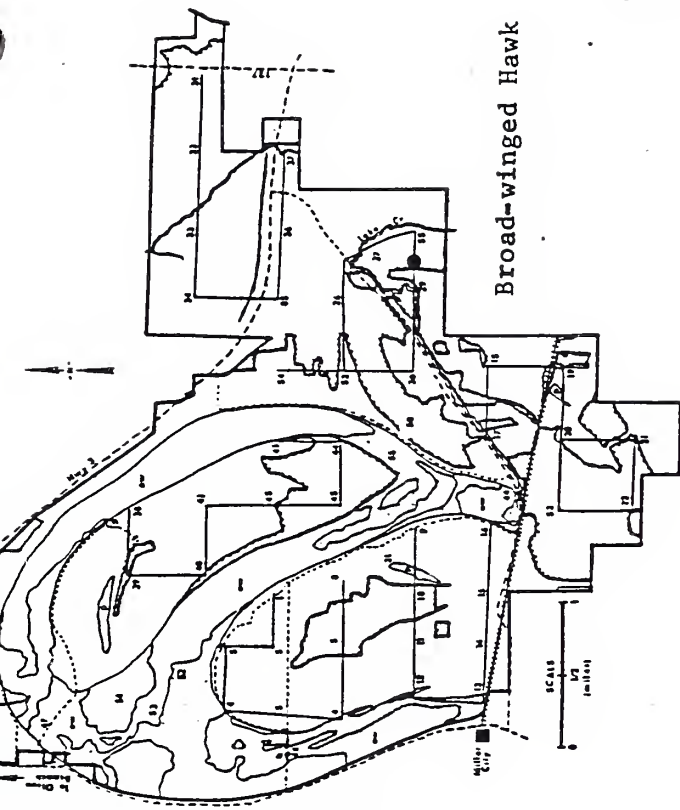


Mallard



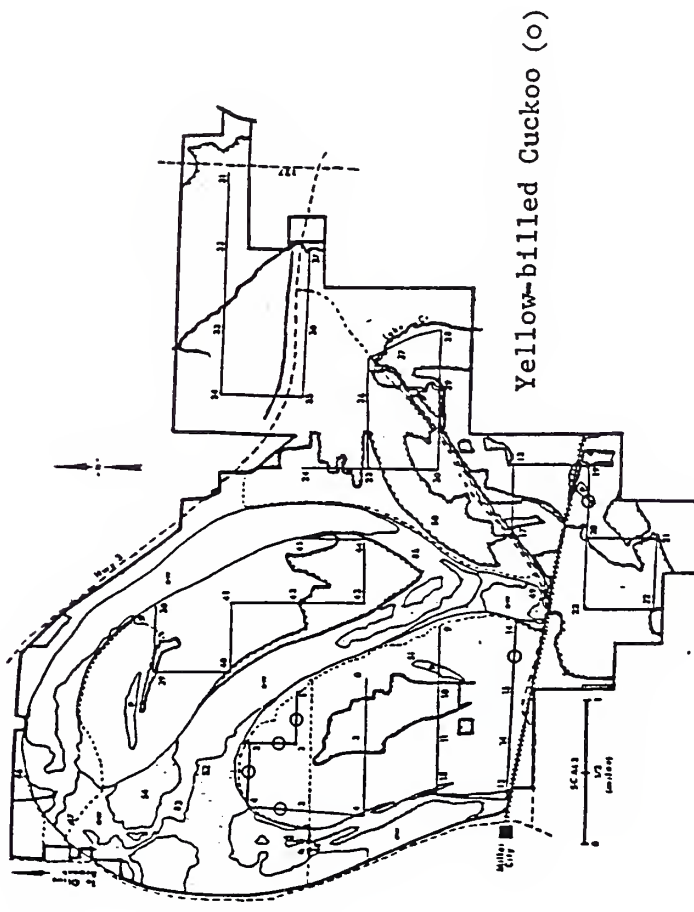
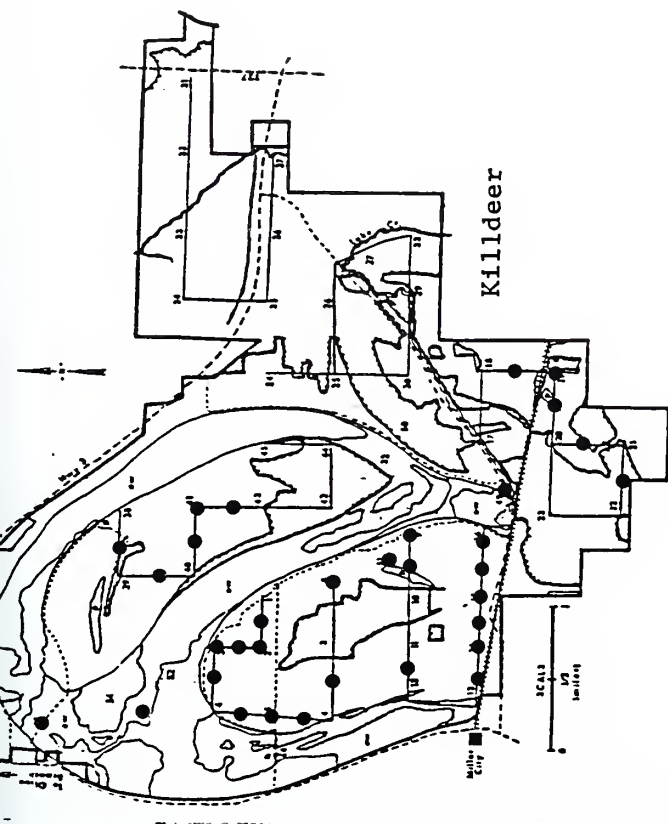
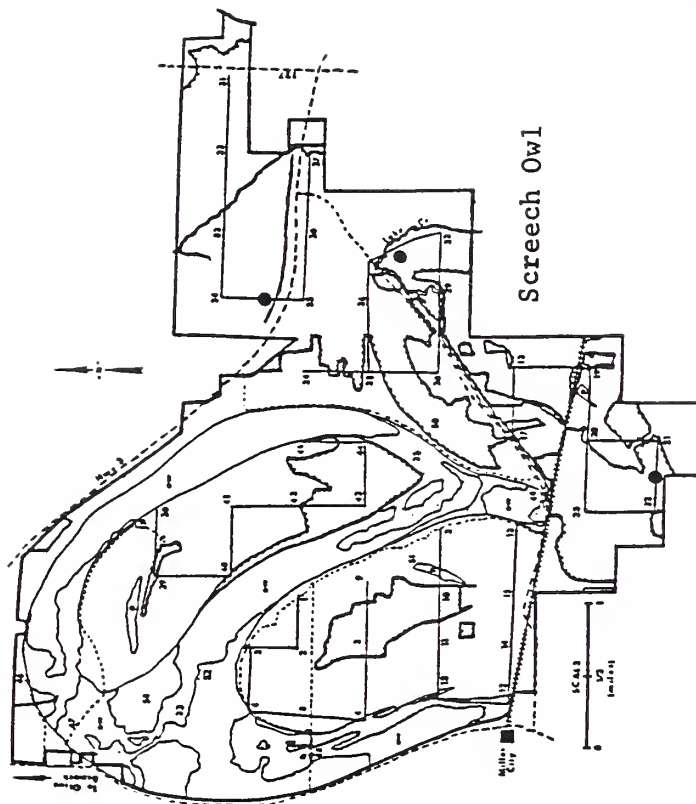
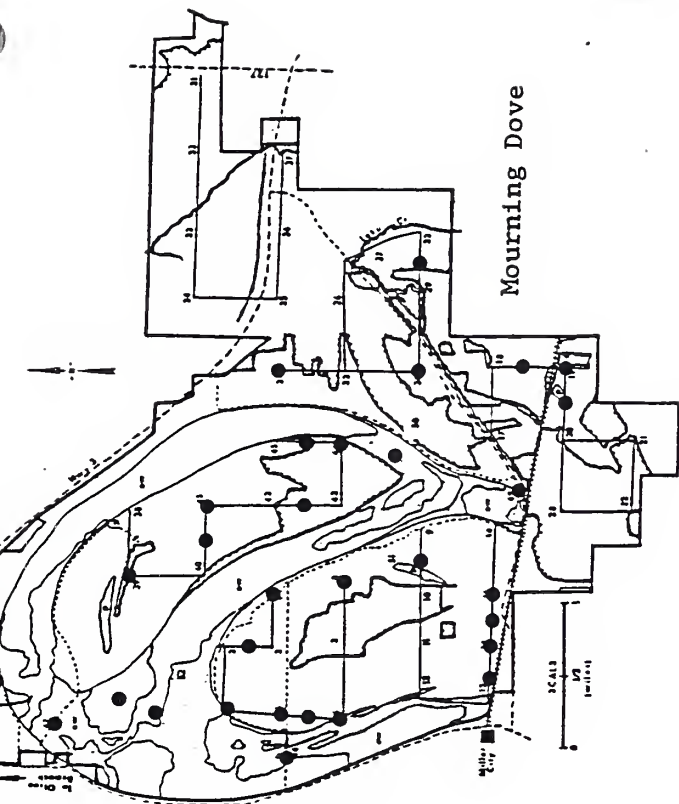






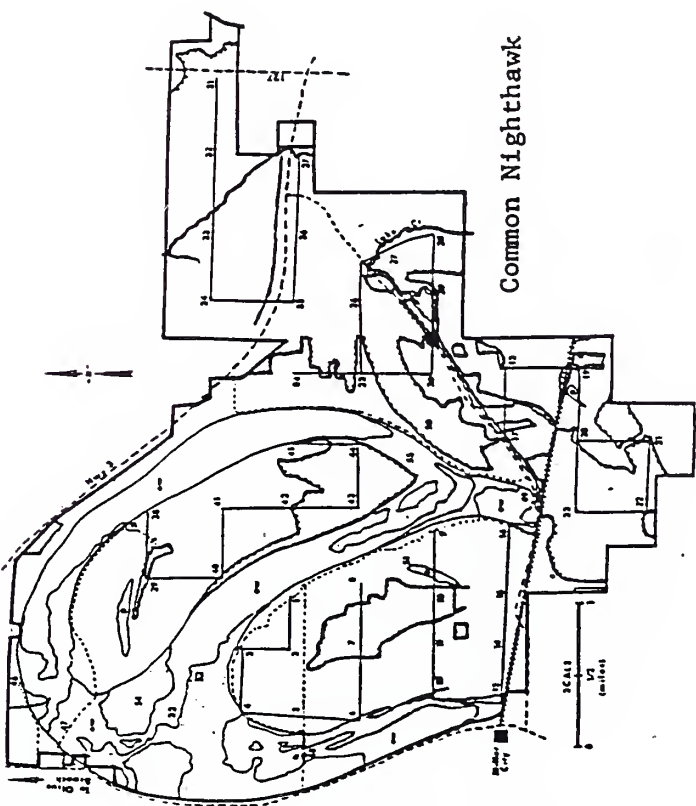
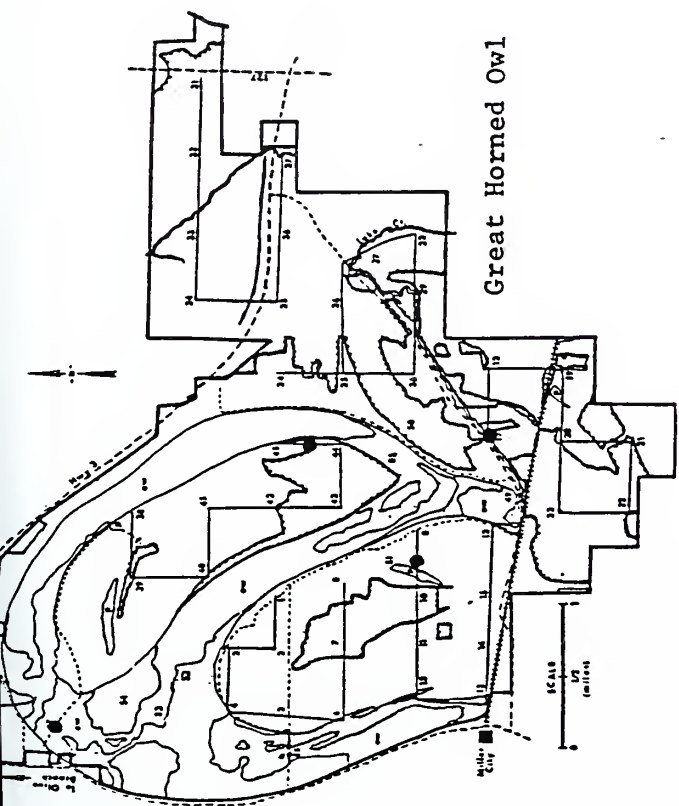
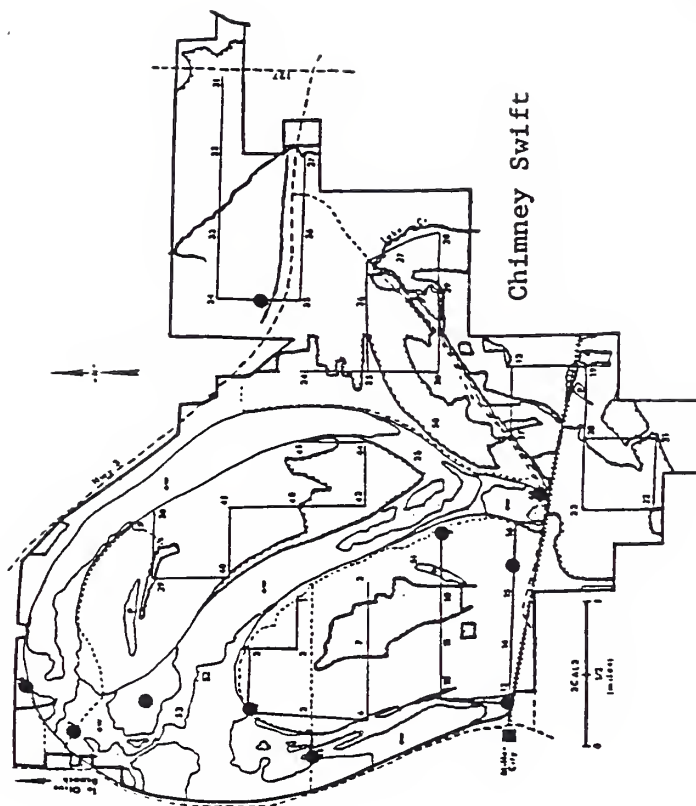
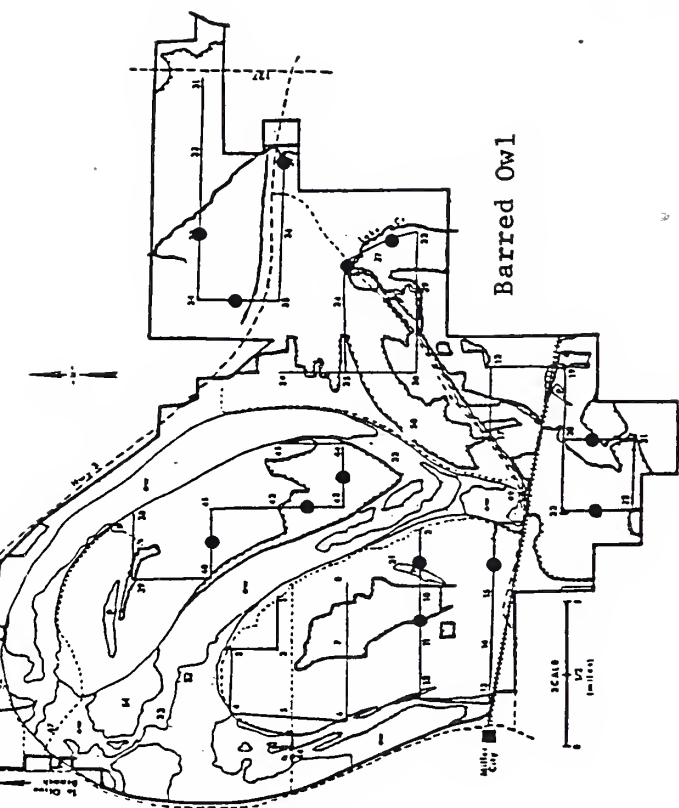




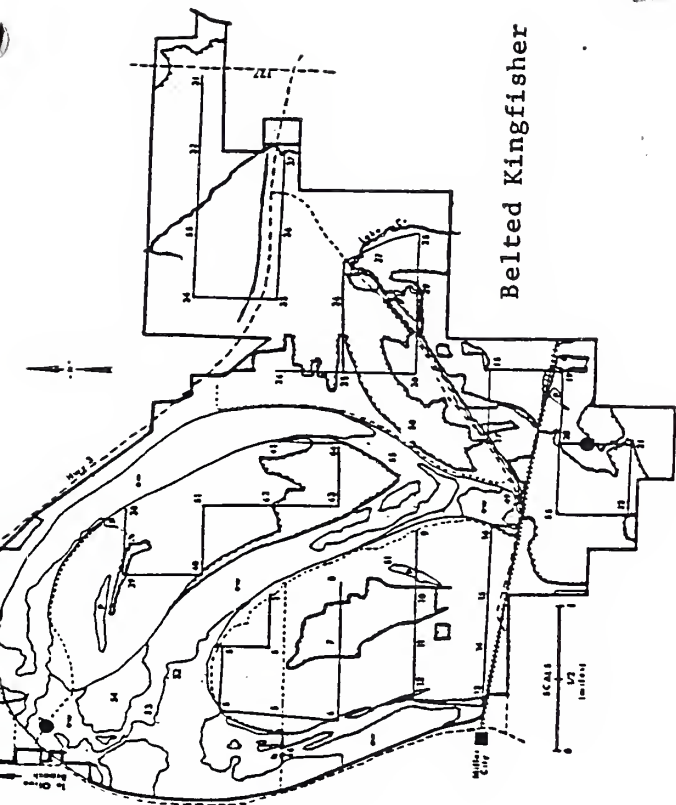




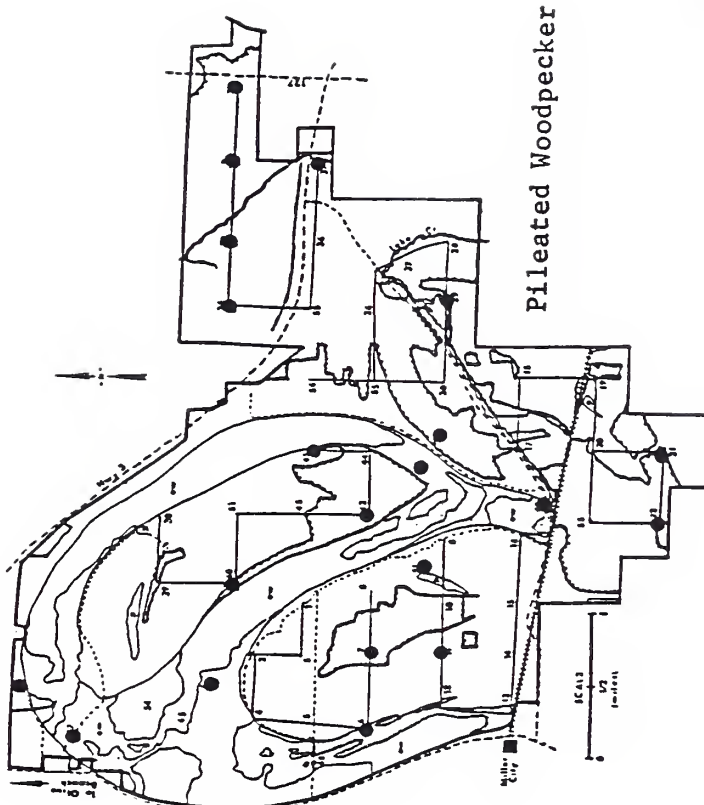




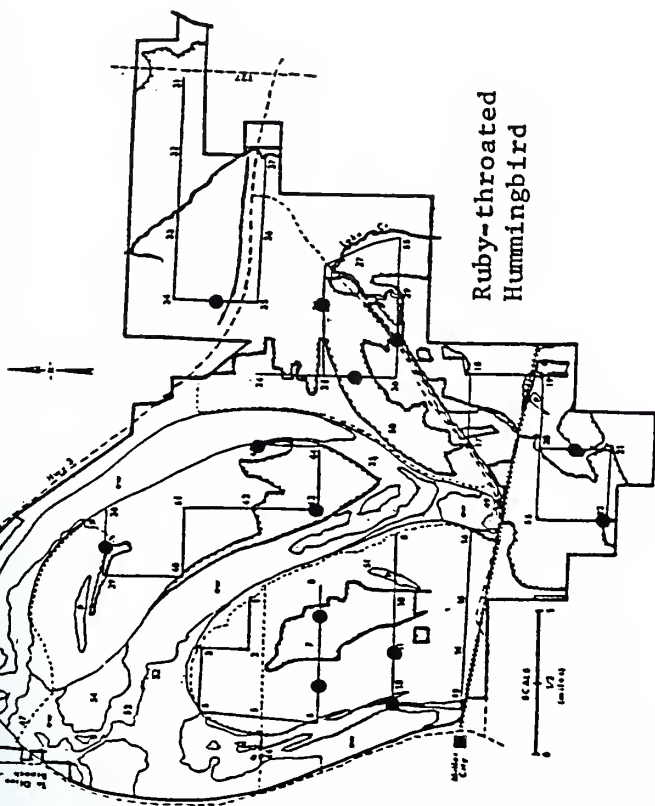




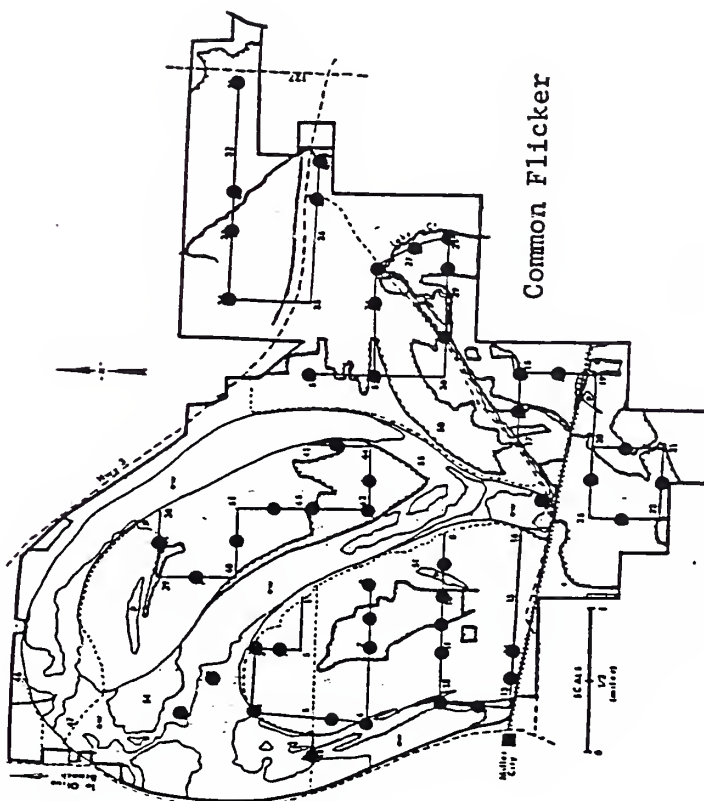
Belted Kingfisher



Pileated Woodpecker

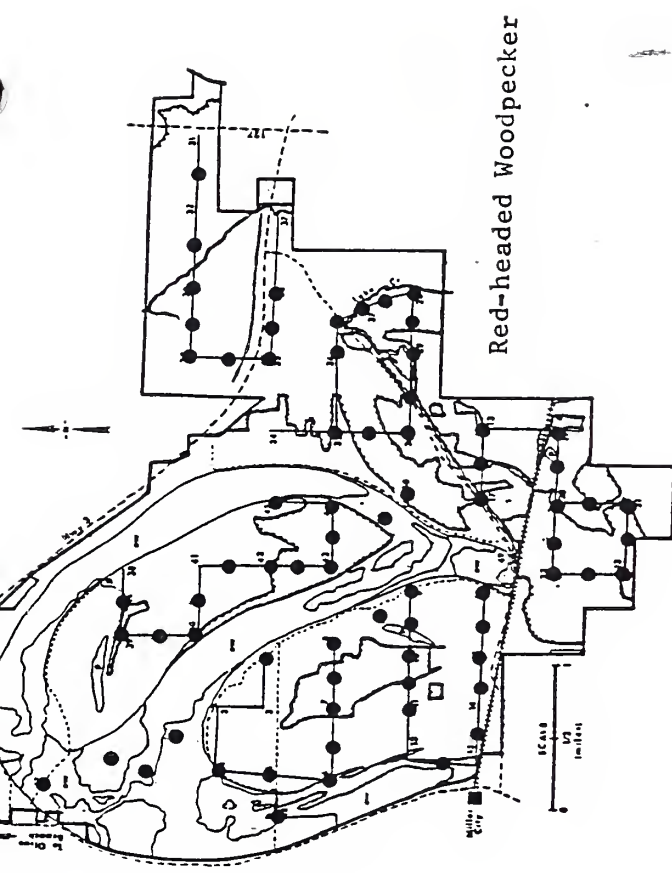


Ruby-throated  
Hummingbird

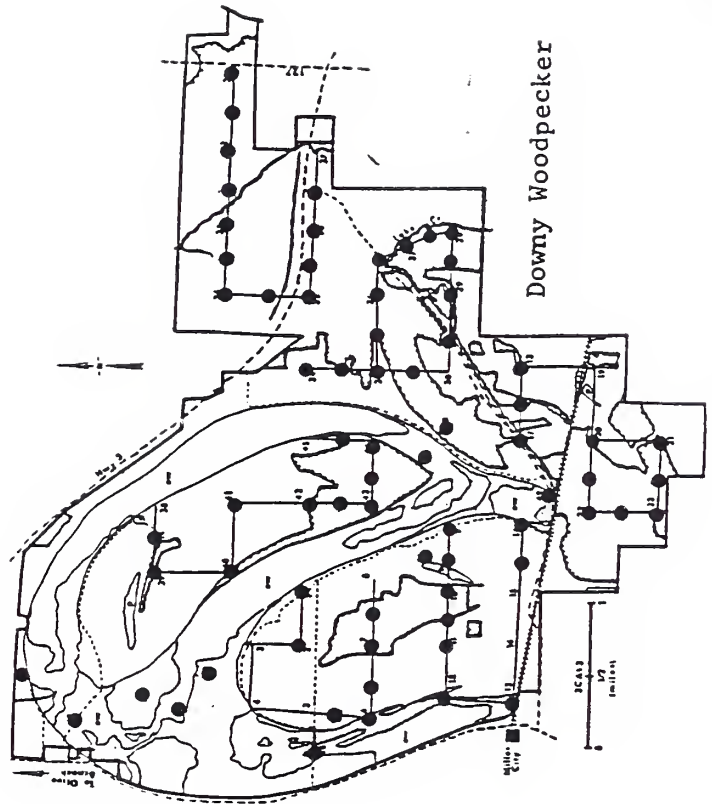


Common Flicker

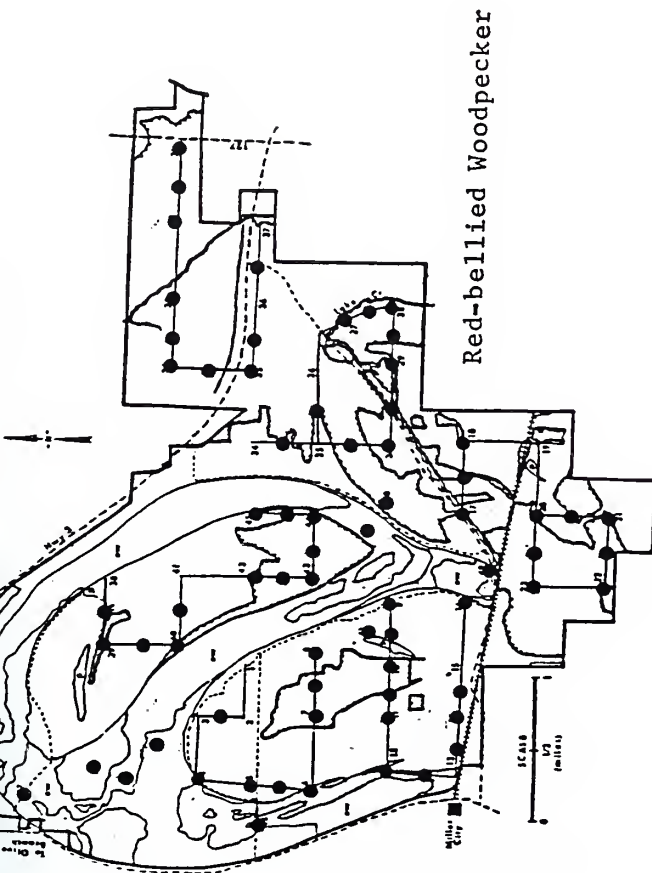




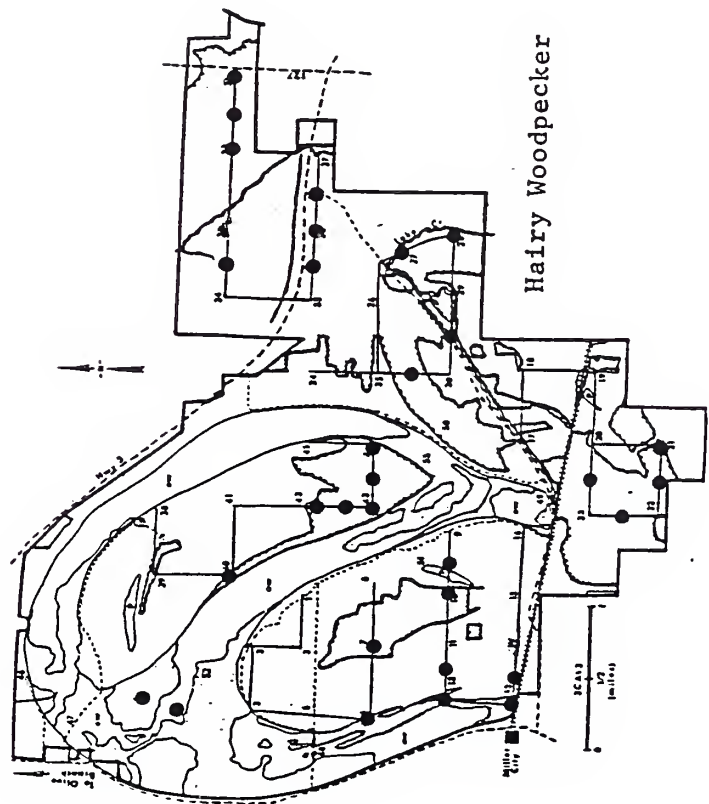
Red-headed Woodpecker



Downy Woodpecker



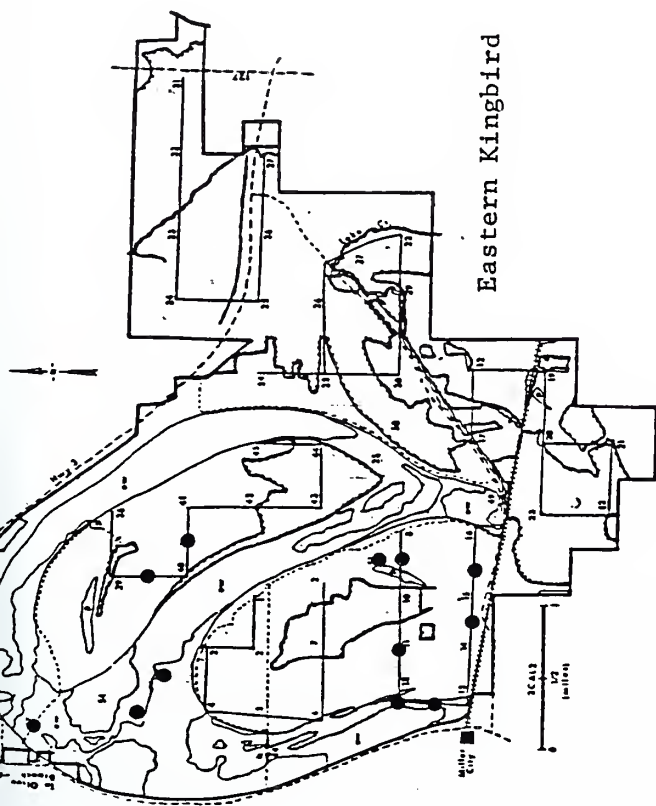
Red-bellied Woodpecker



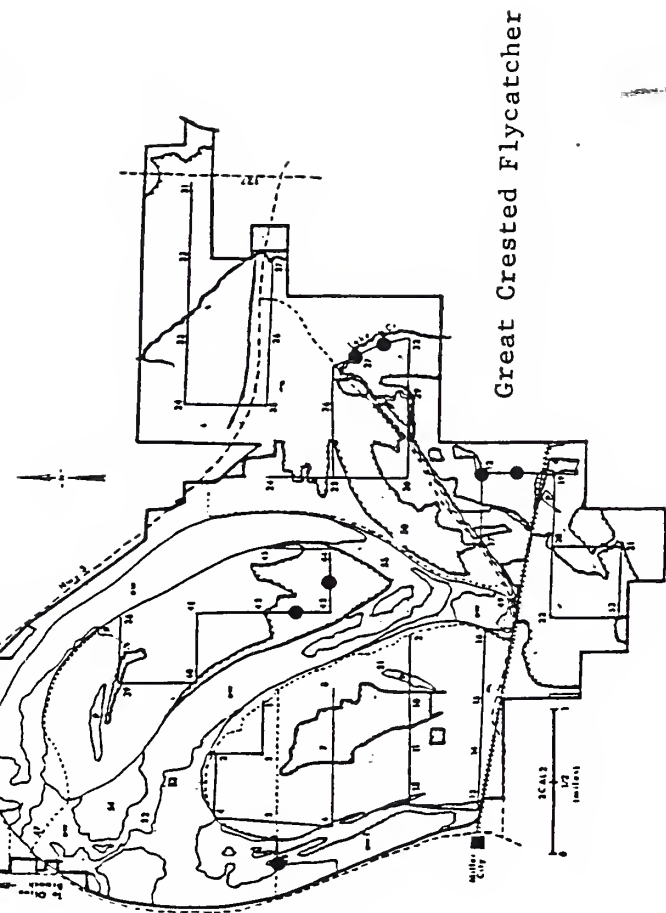
Hairy Woodpecker



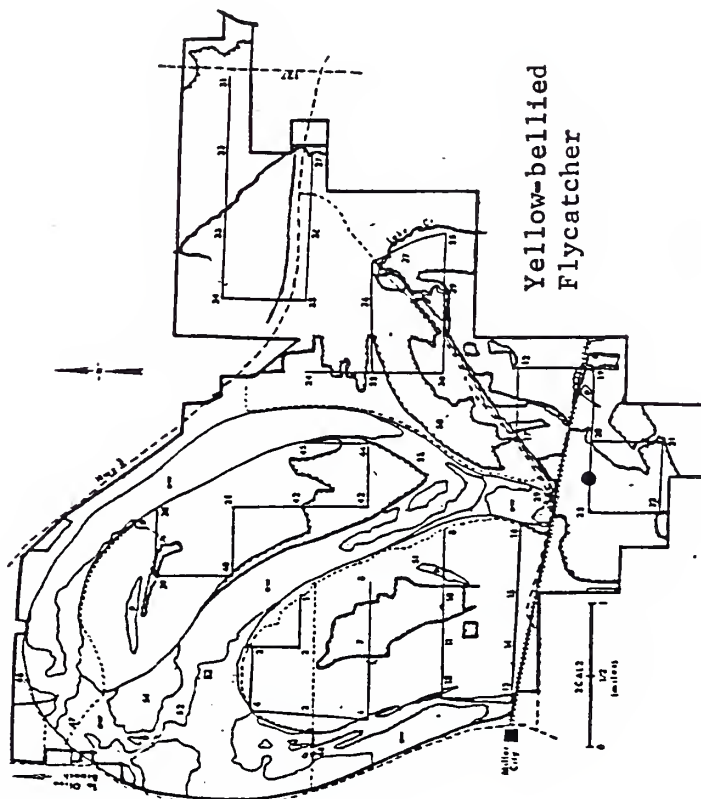




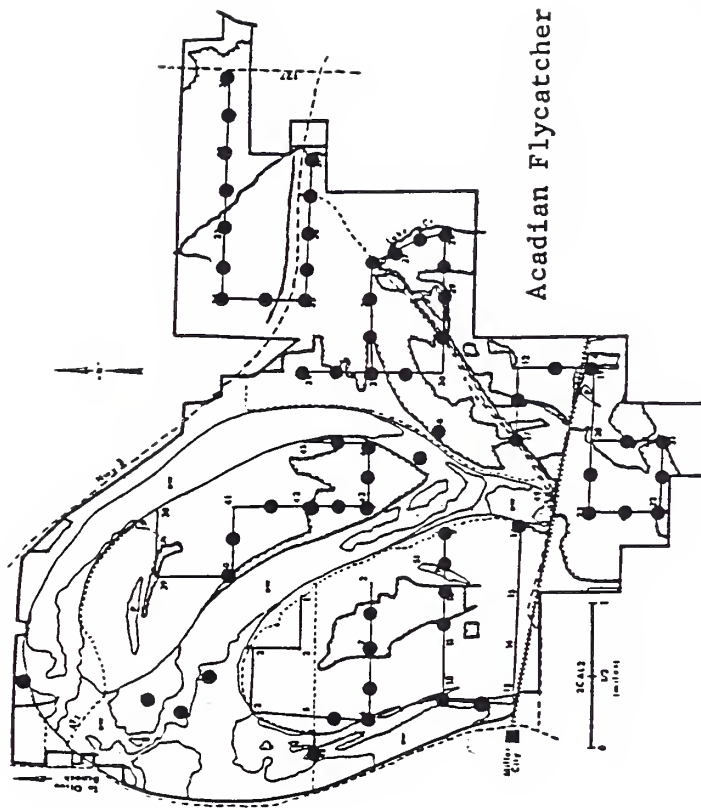
Eastern Kingbird



Great Crested Flycatcher



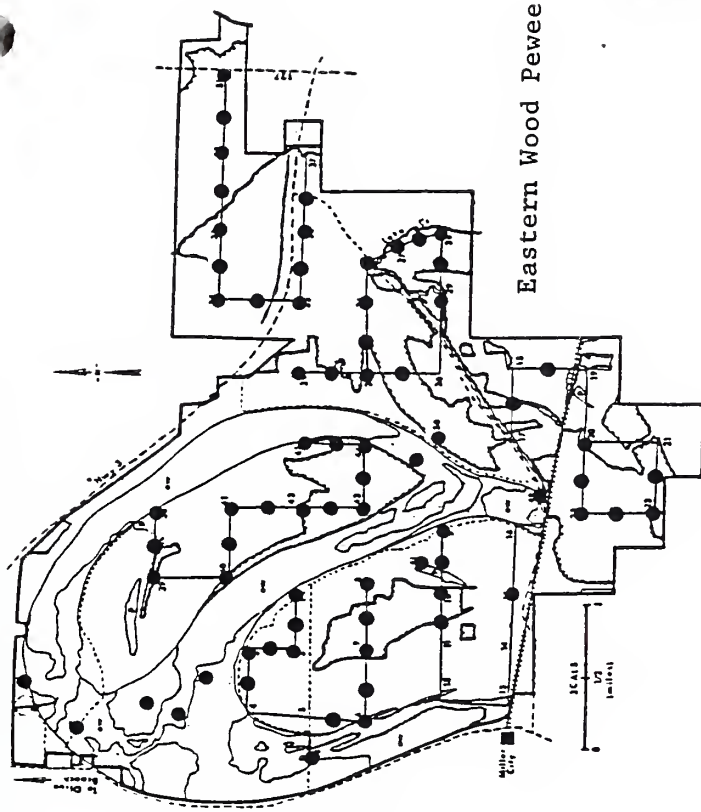
Yellow-bellied Flycatcher



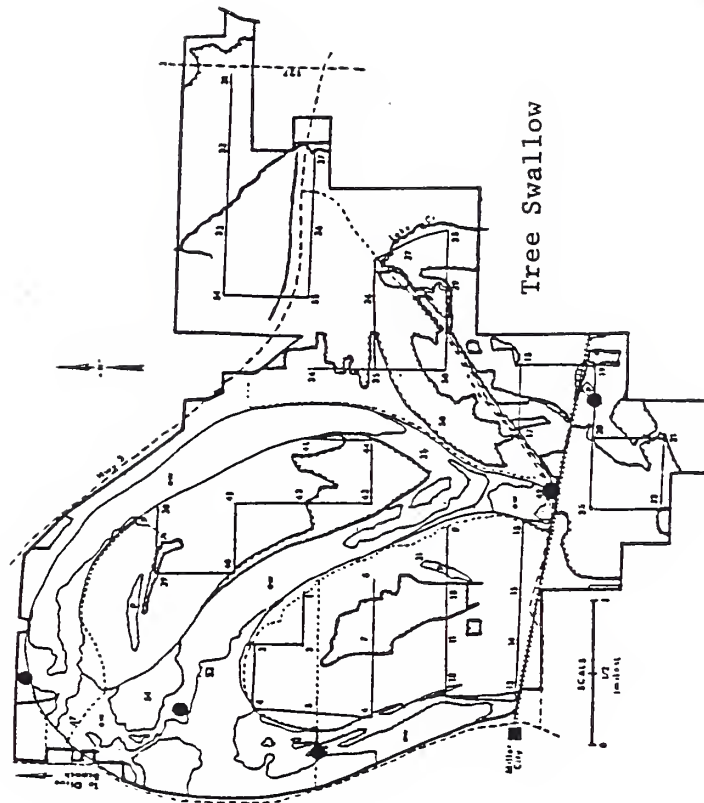
Acadian Flycatcher



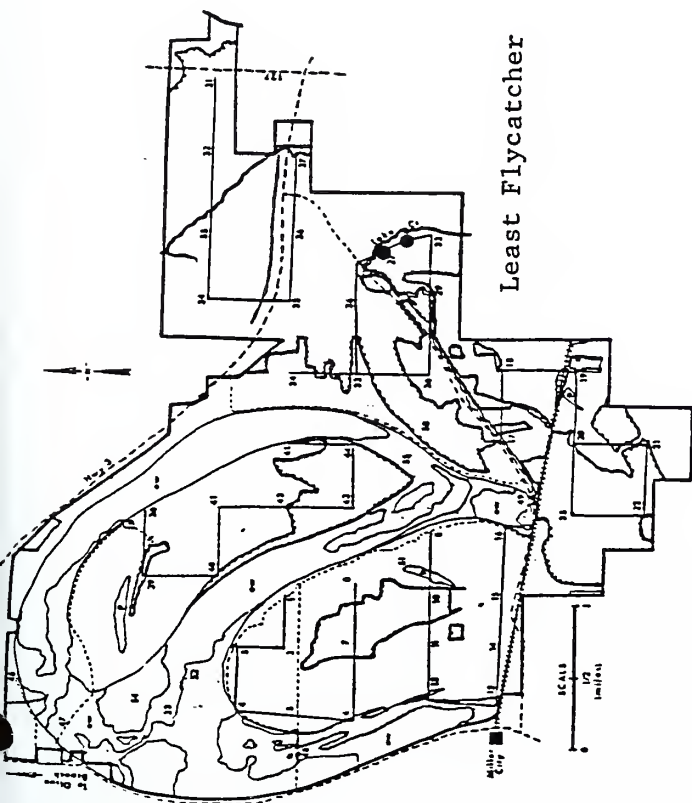




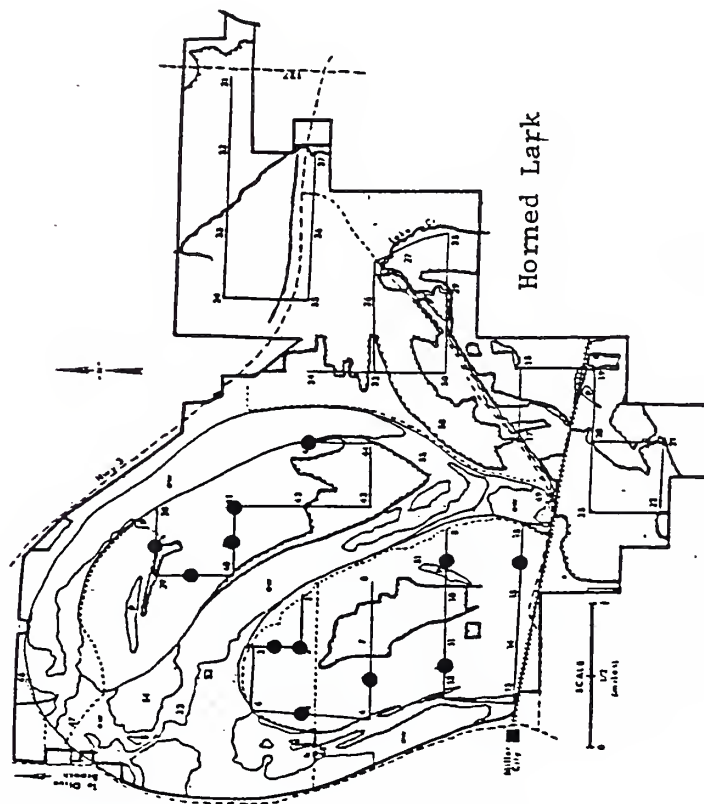
Eastern Wood Pewee



Tree Swallow

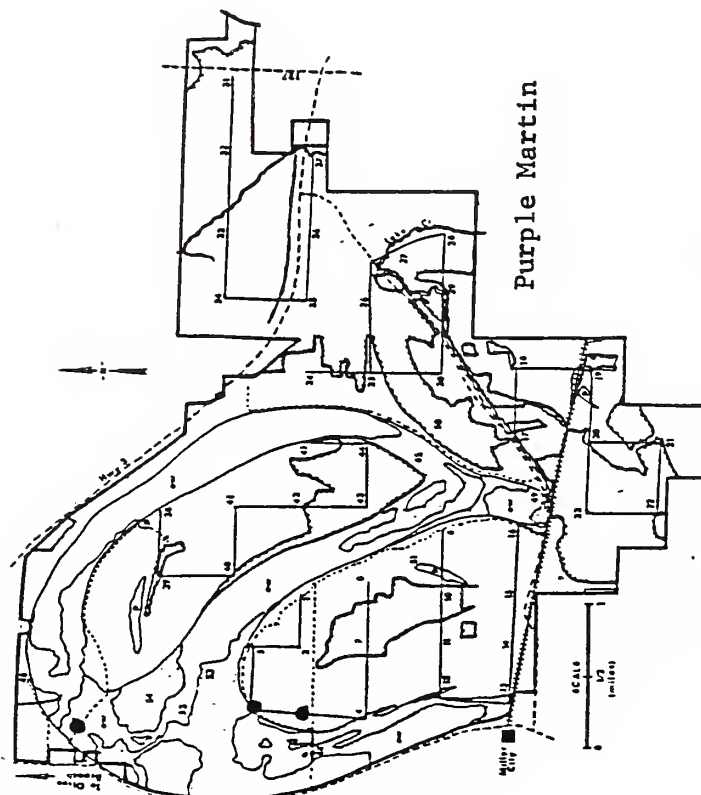
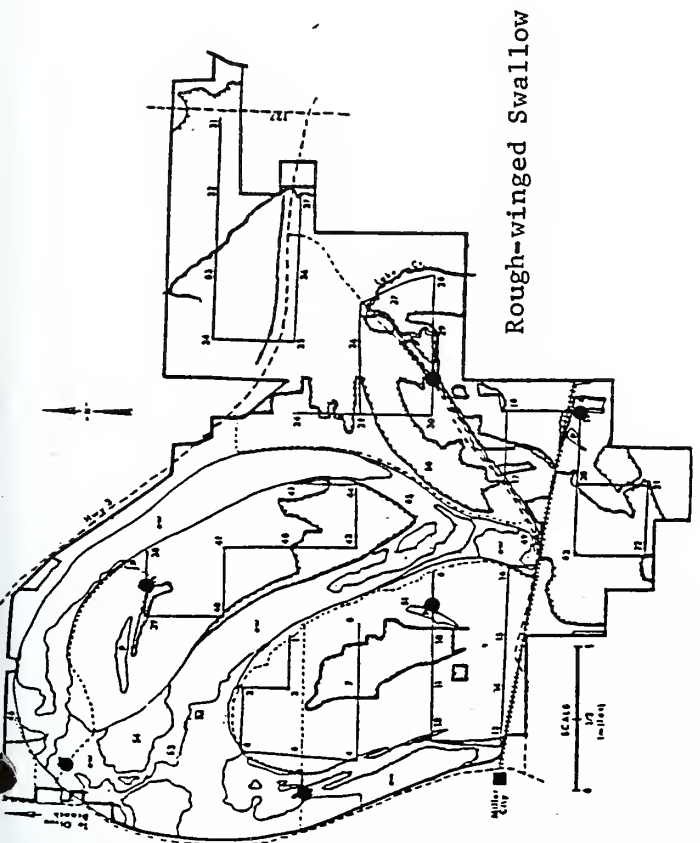
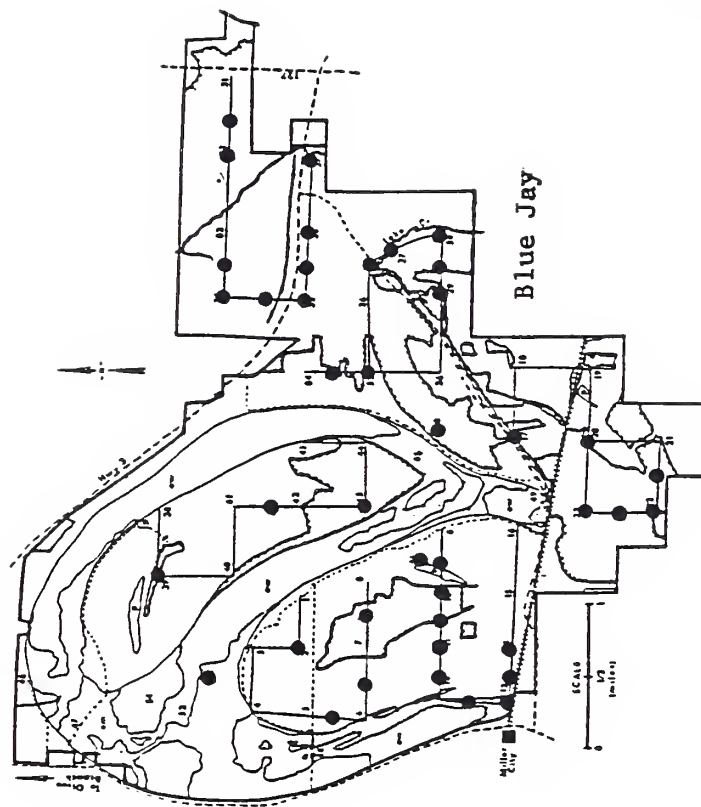
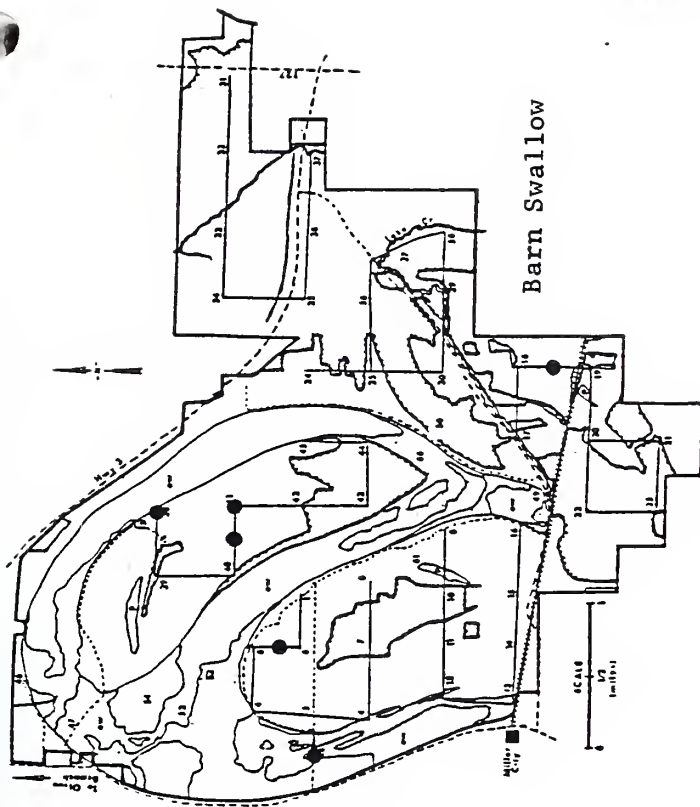


Least Flycatcher

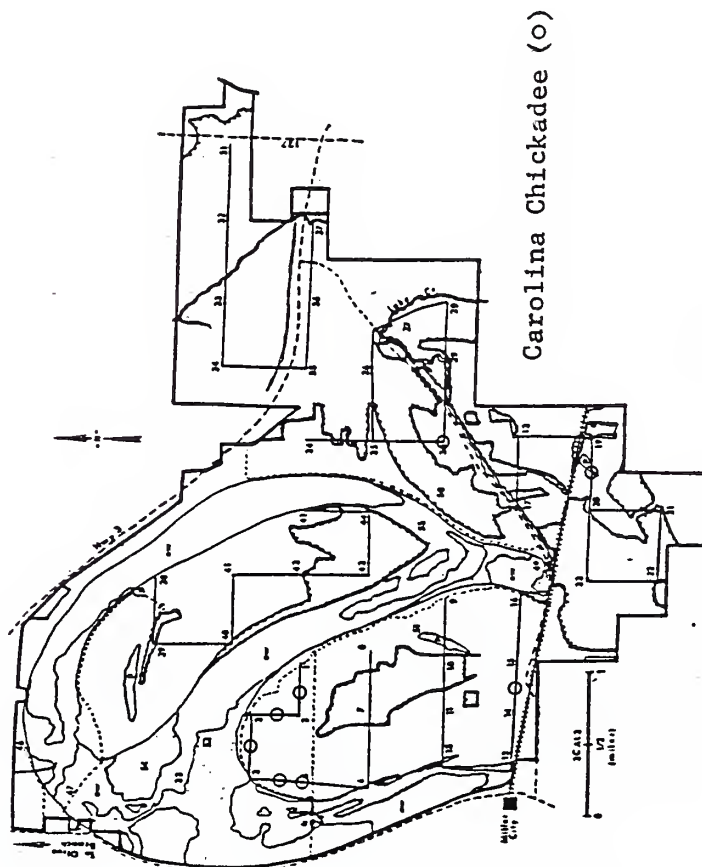
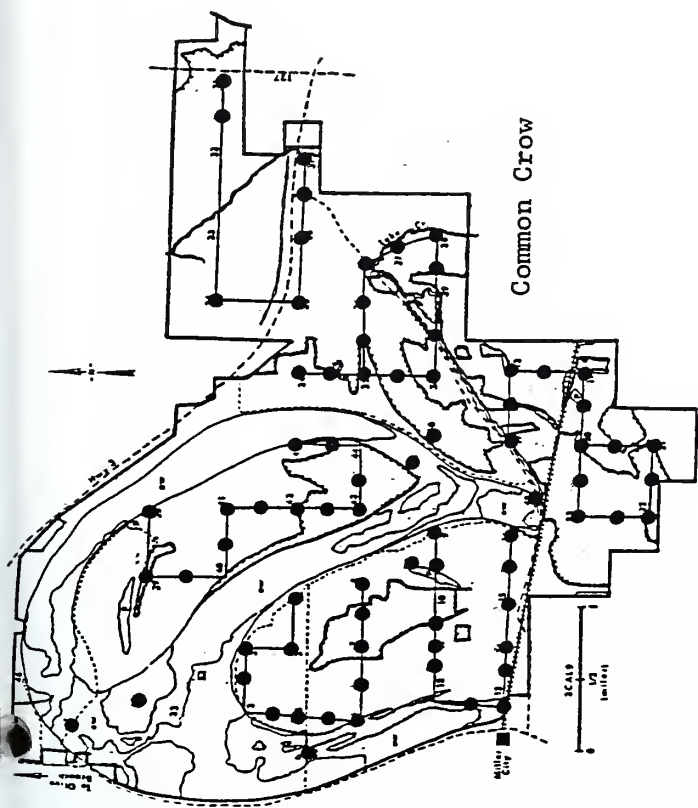
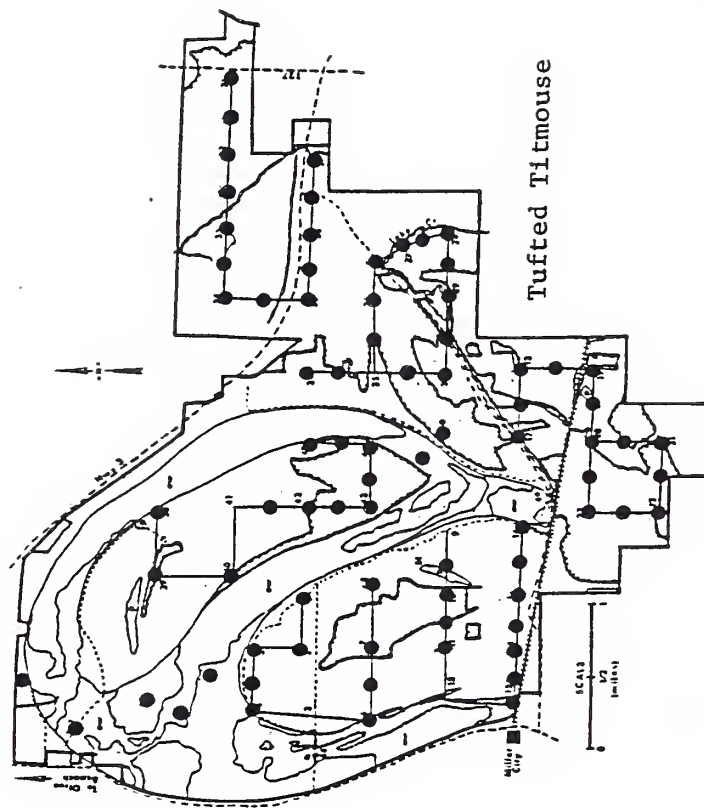
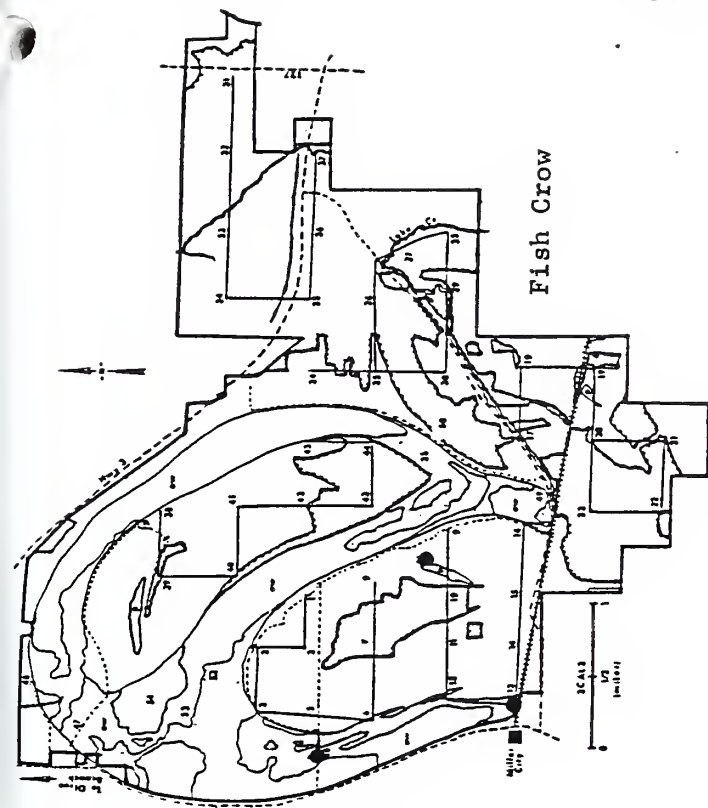


Horned Lark



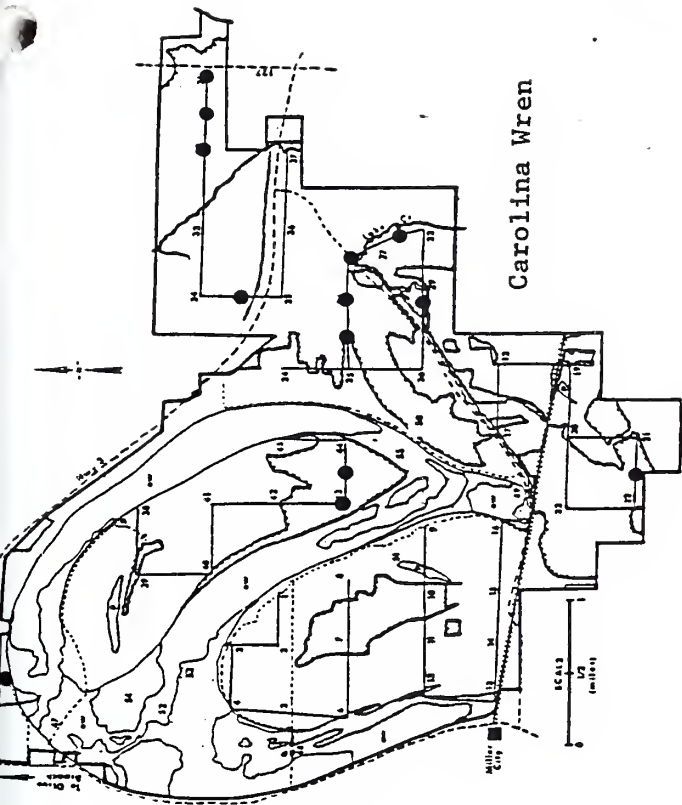




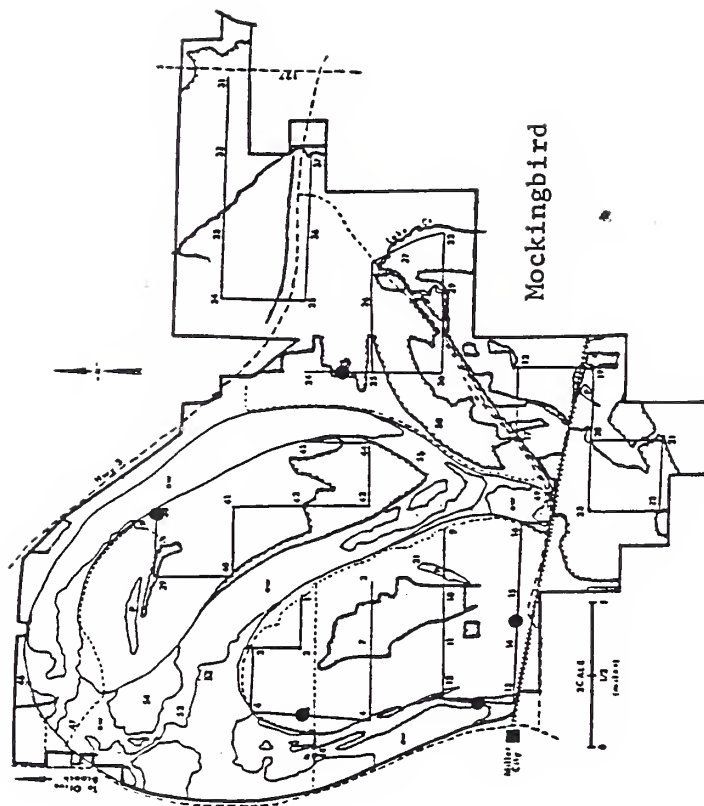




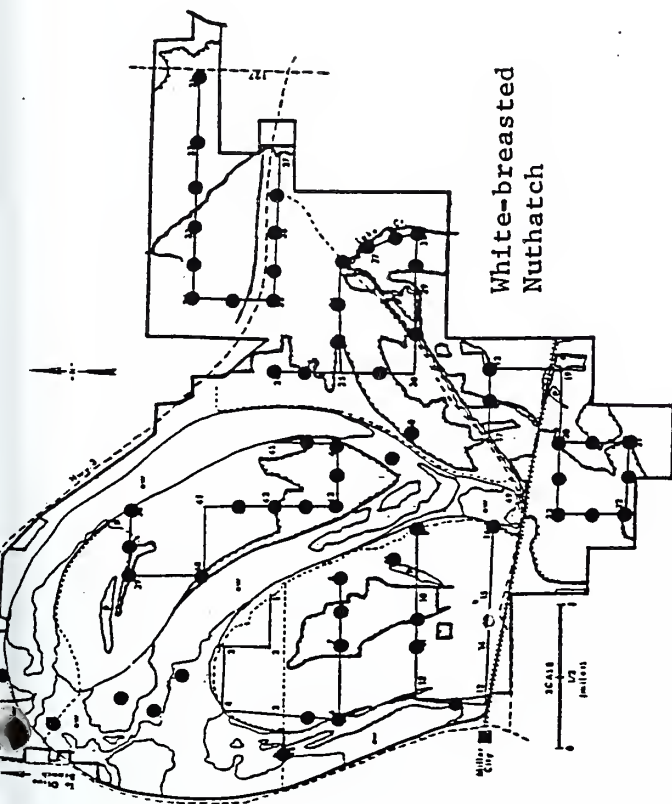




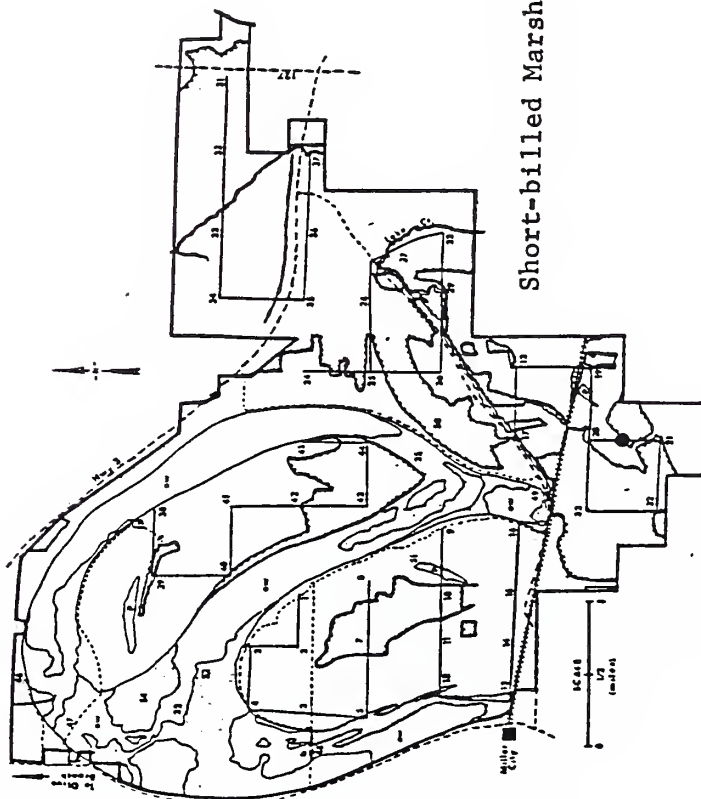
Carolina Wren



Mockingbird



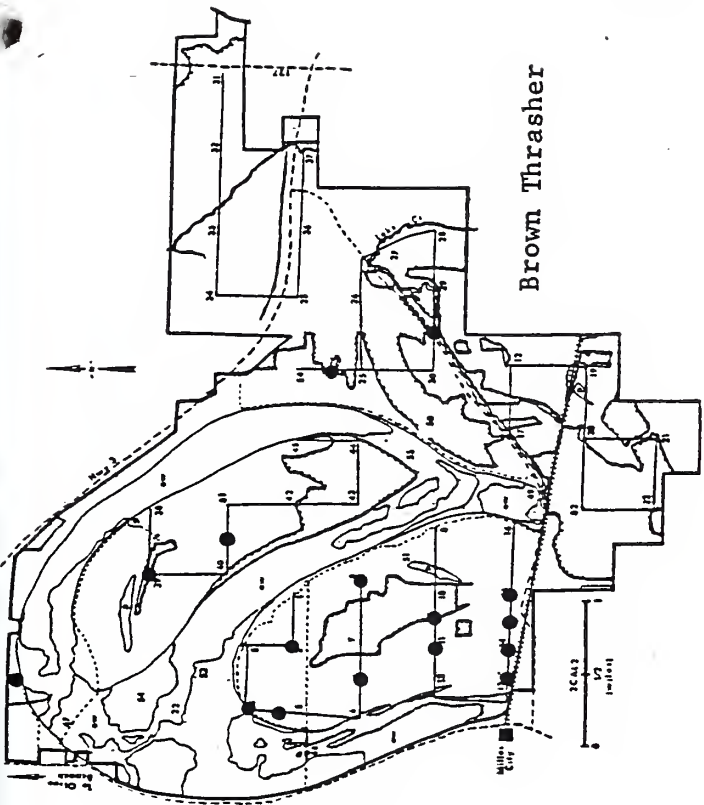
White-breasted  
Nuthatch



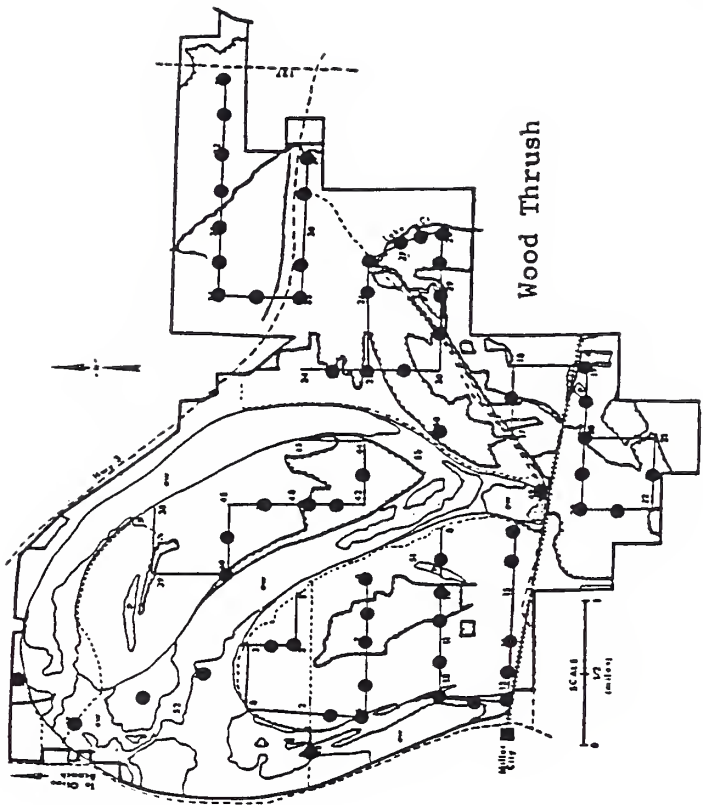
Short-billed Marsh Wren



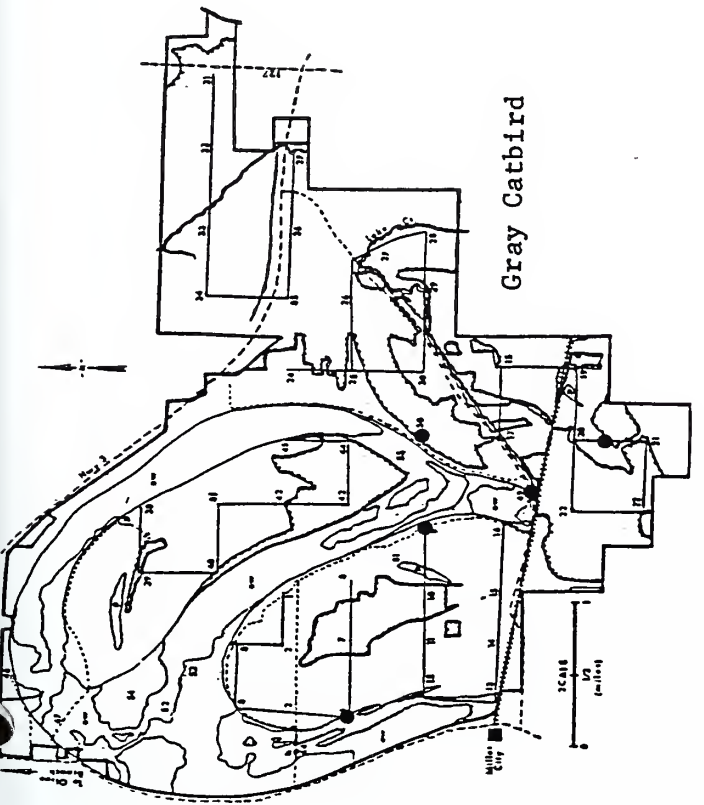




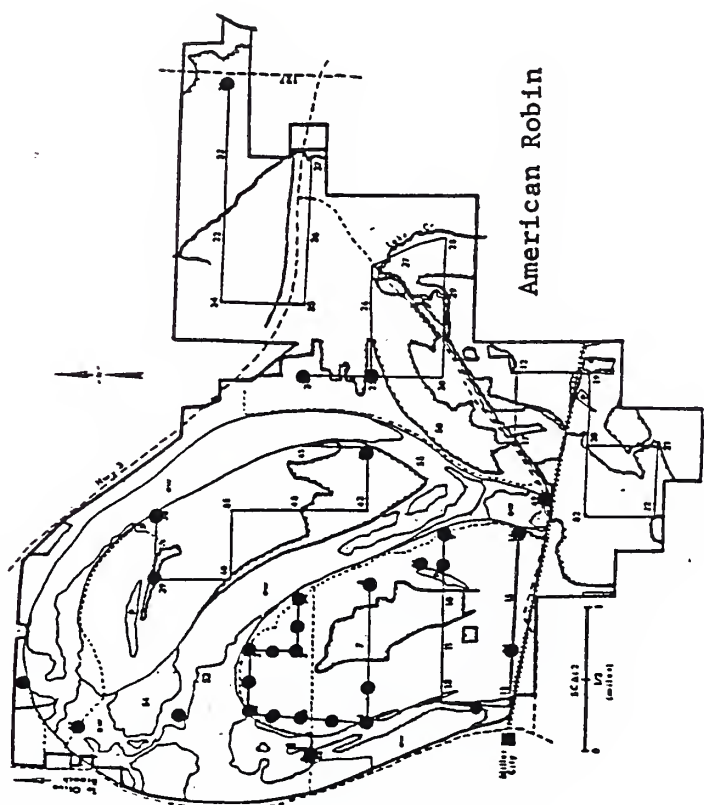
Brown Thrasher



Wood Thrush

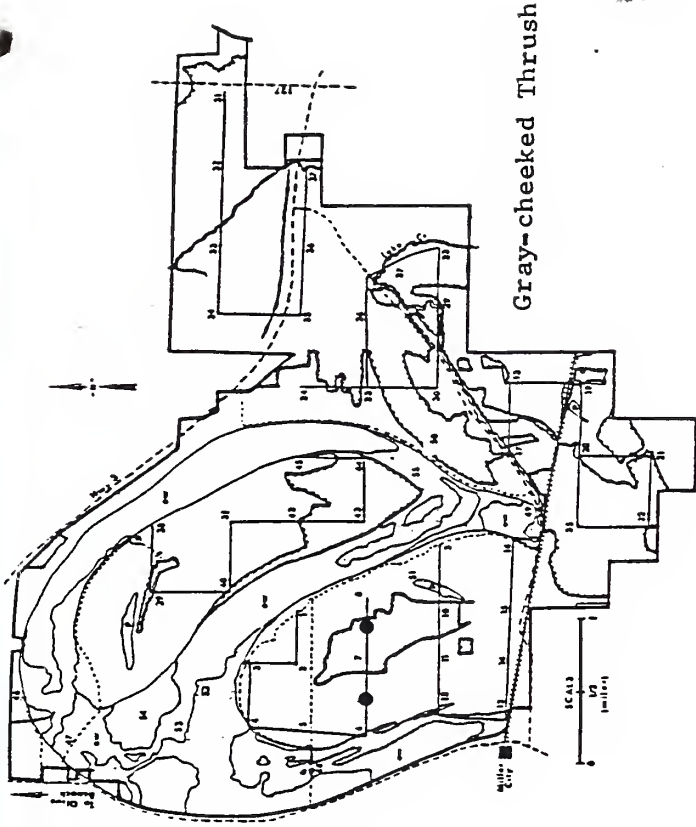


Gray Catbird

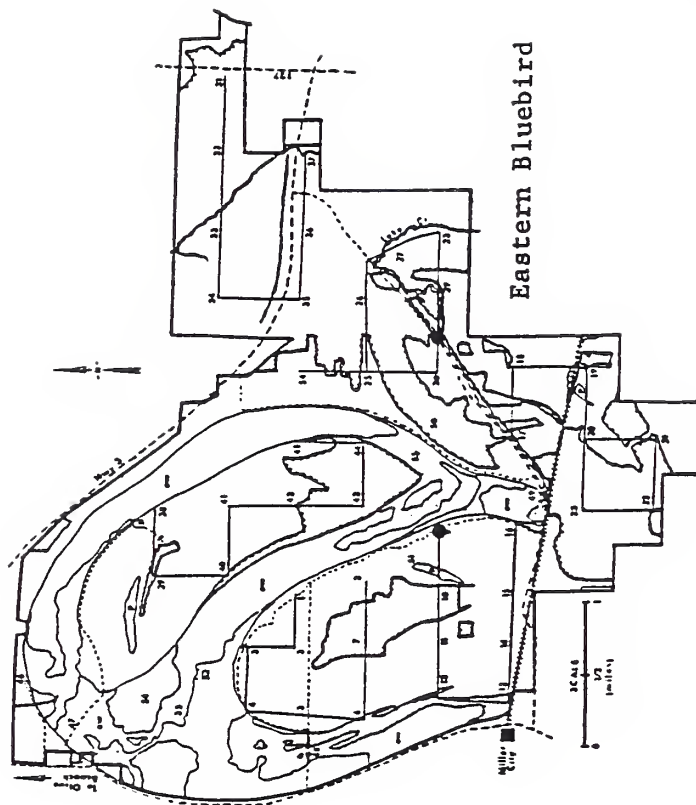


American Robin

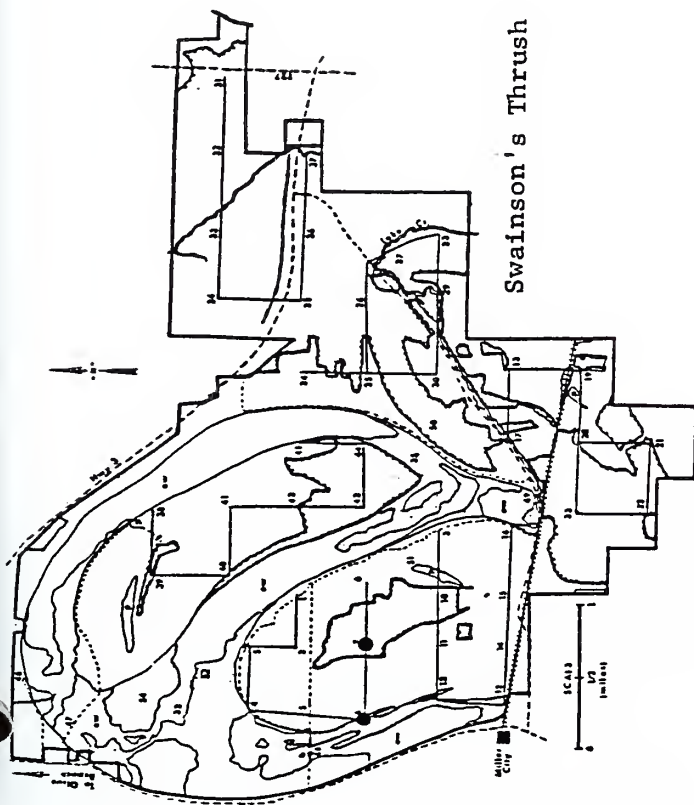




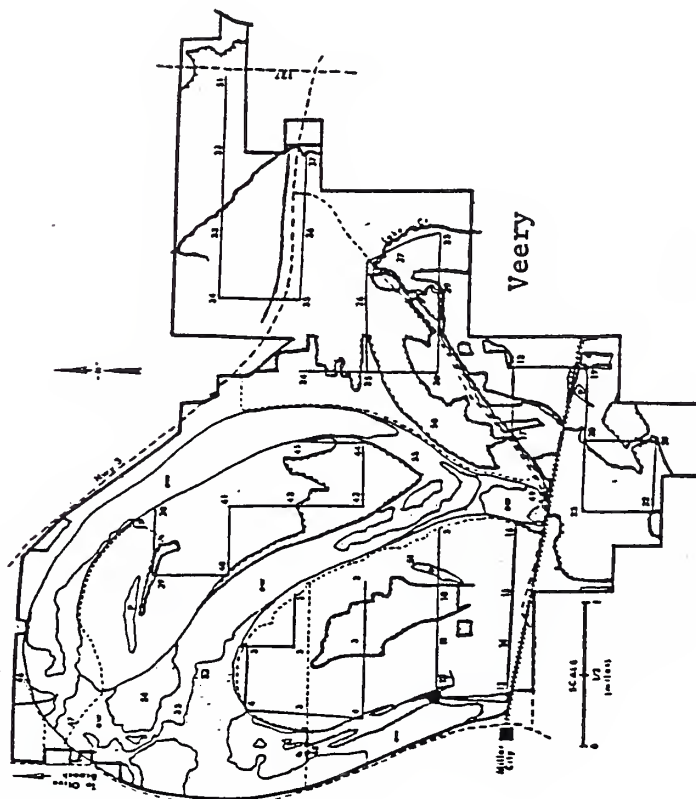
Gray-cheeked Thrush



Eastern Bluebird

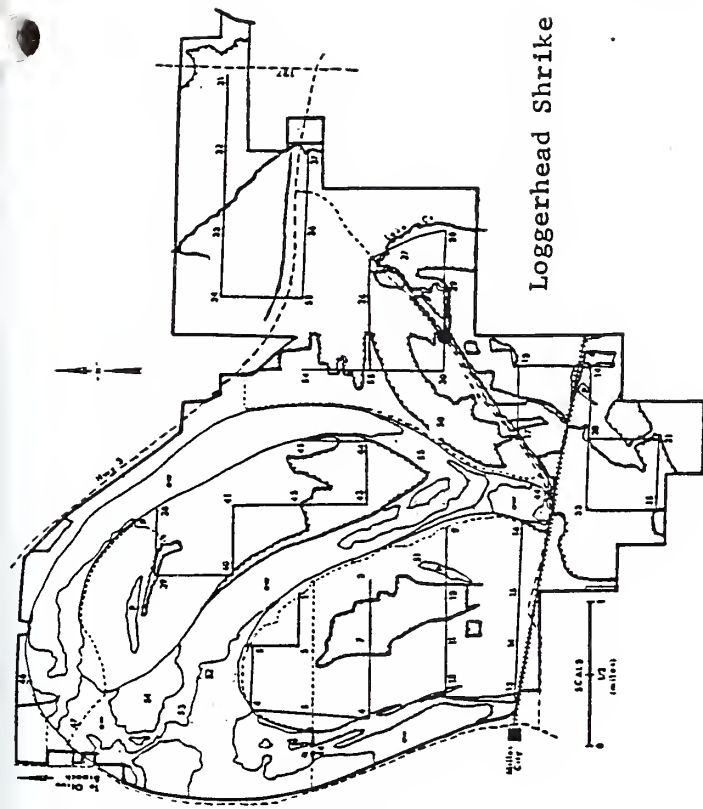


Swainson's Thrush

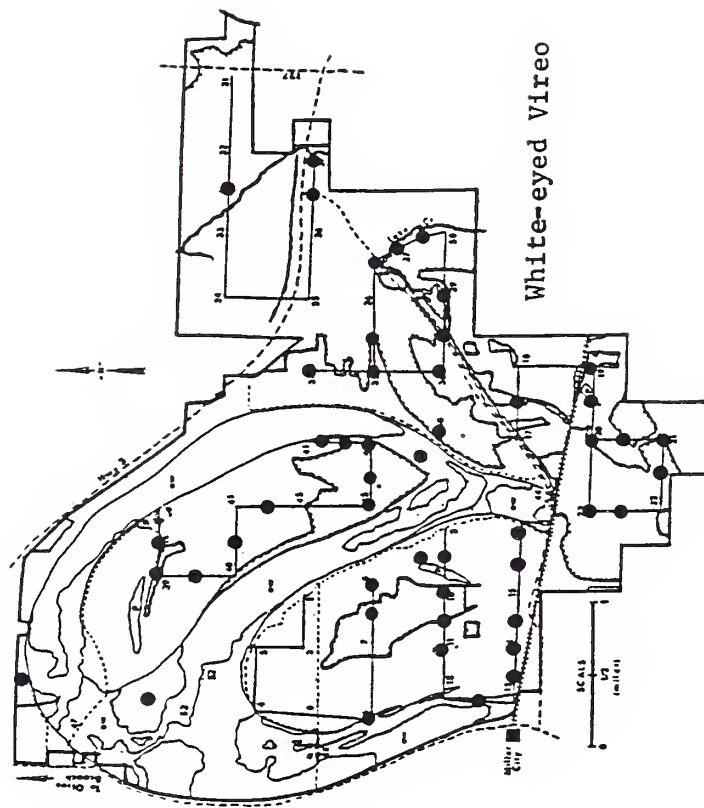


Veery

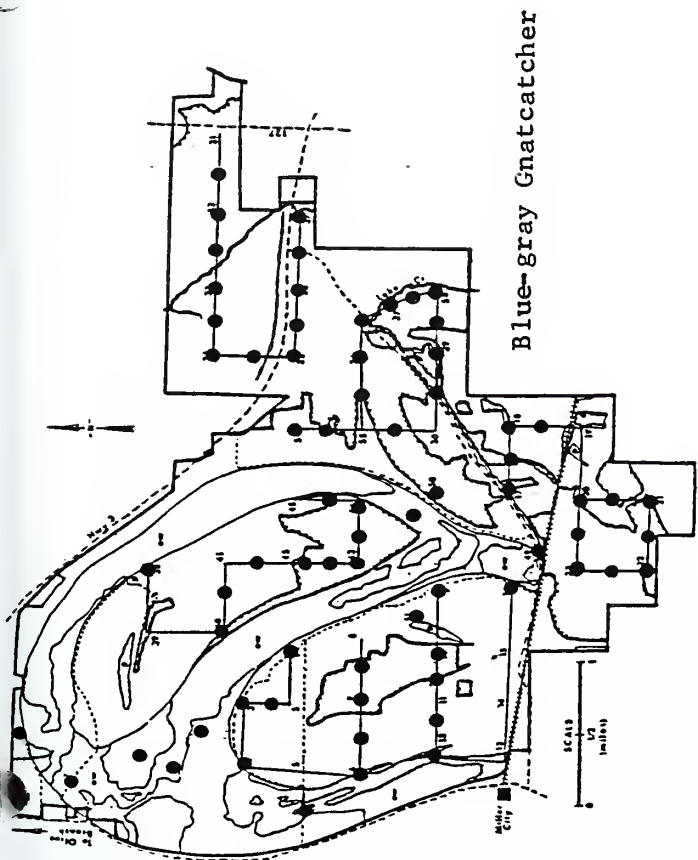




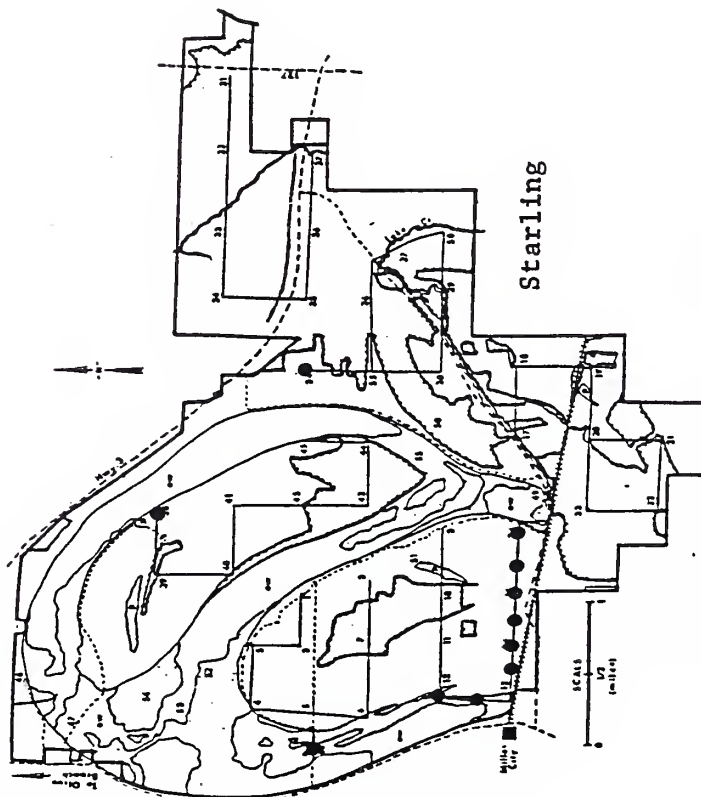
Loggerhead Shrike



White-eyed Vireo



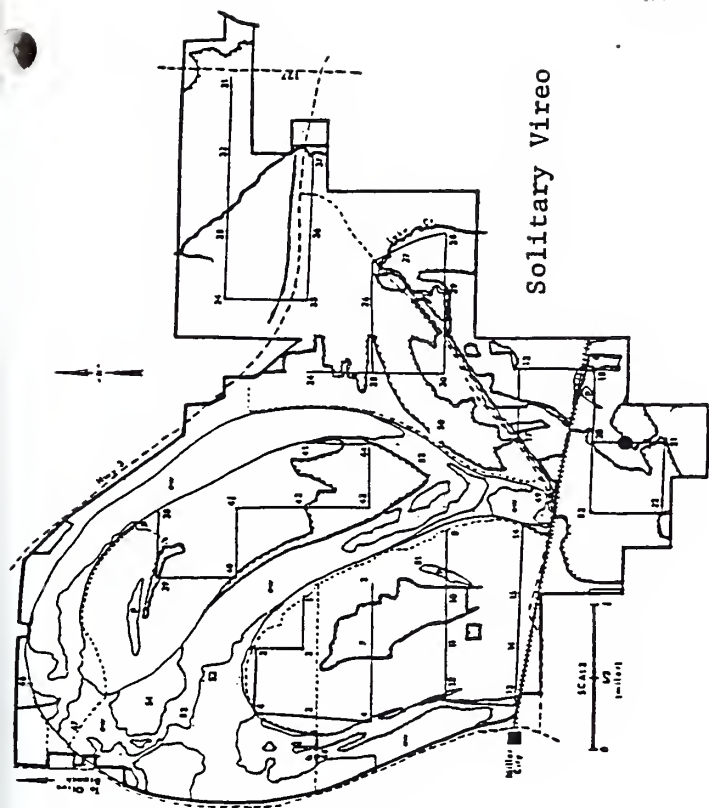
Blue-gray Gnatcatcher



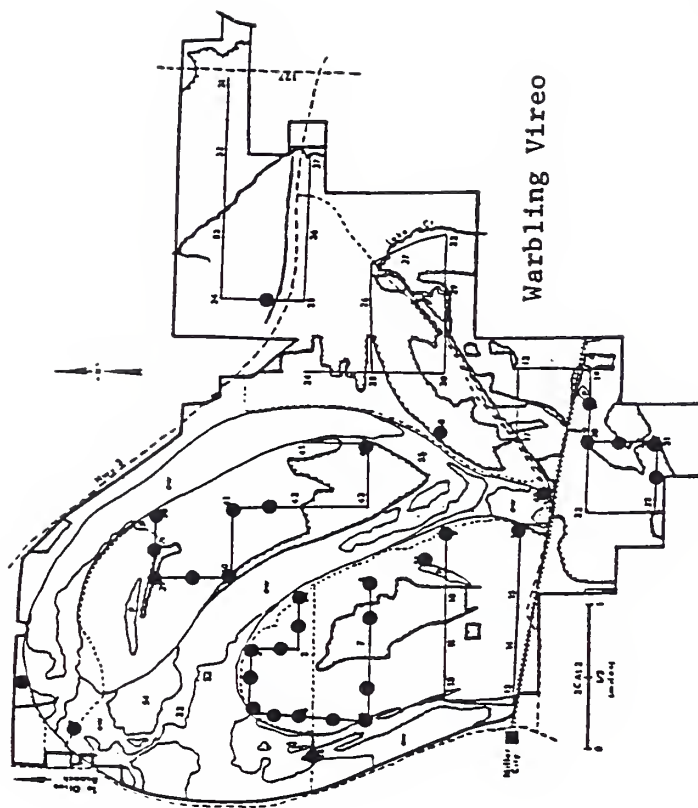
Starling



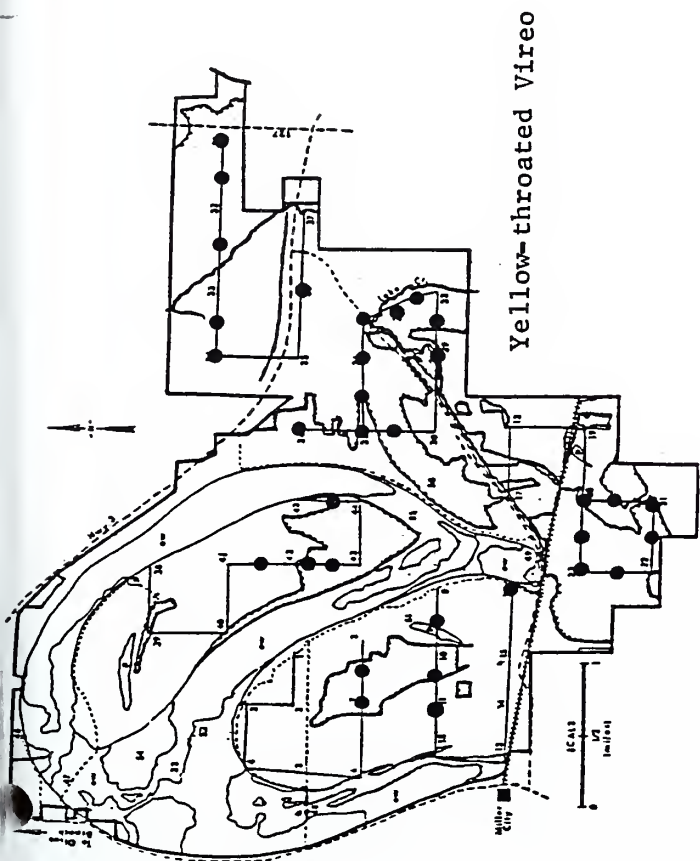




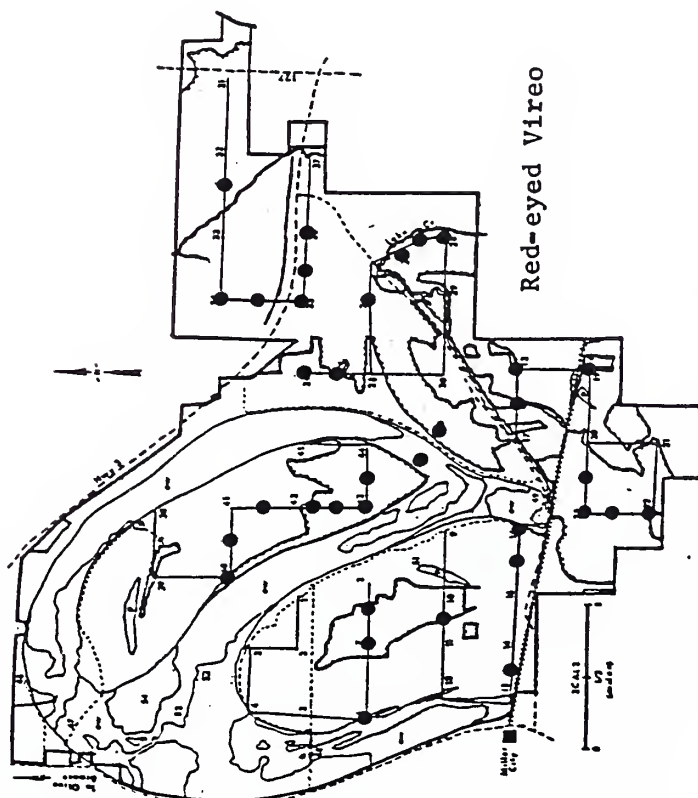
Solitary Vireo



Warbling Vireo



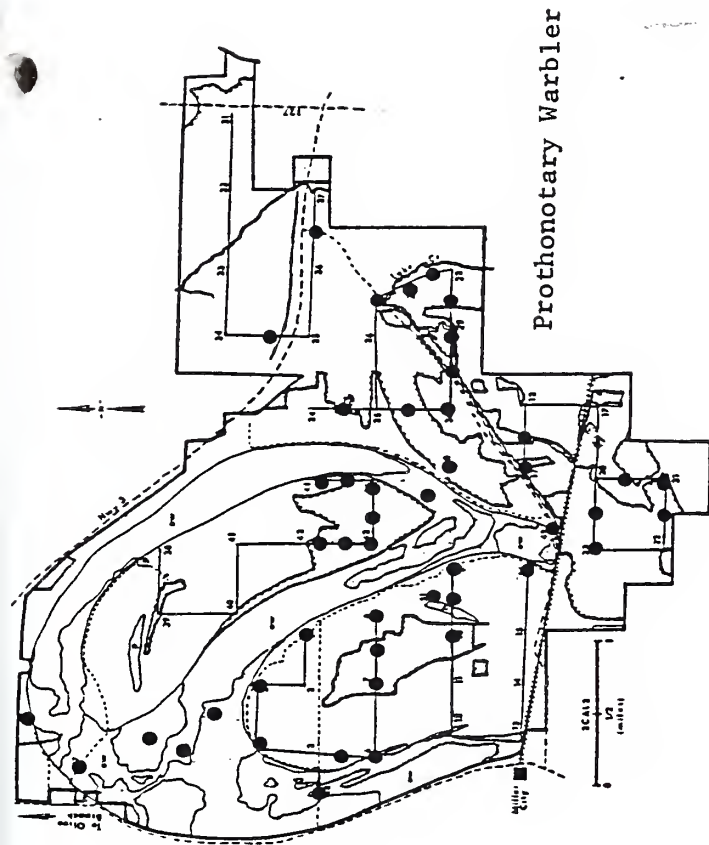
Yellow-throated Vireo



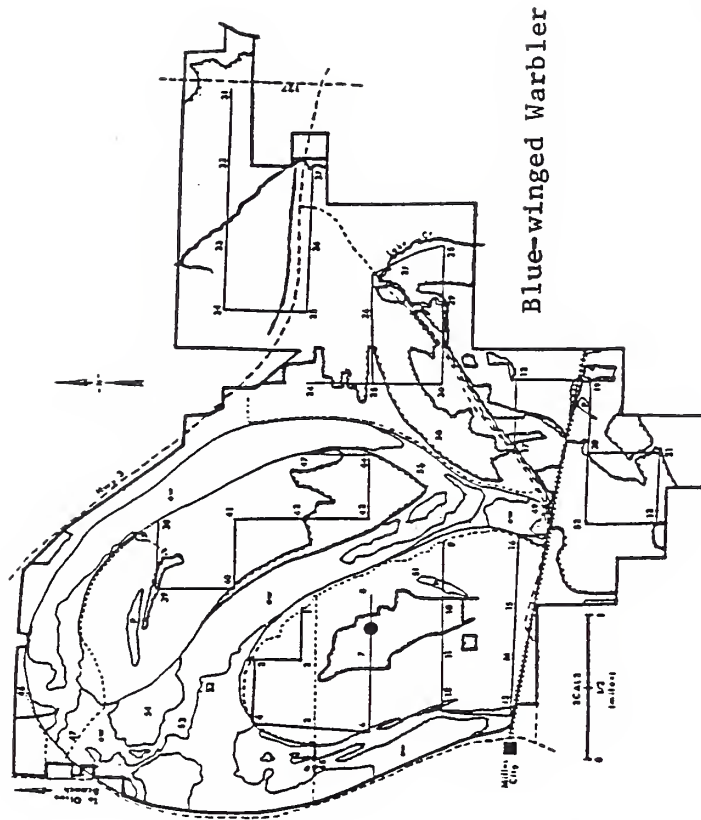
Red-eyed Vireo



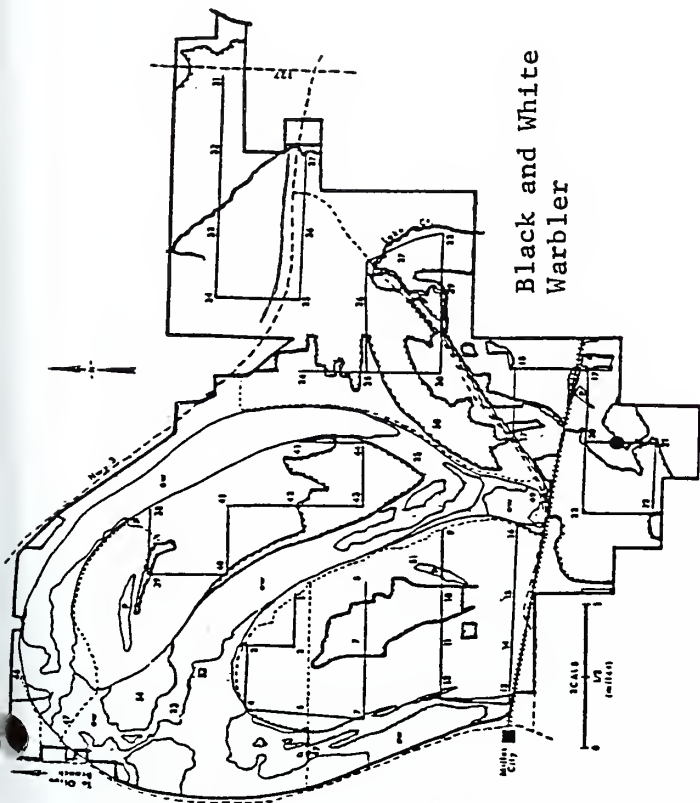




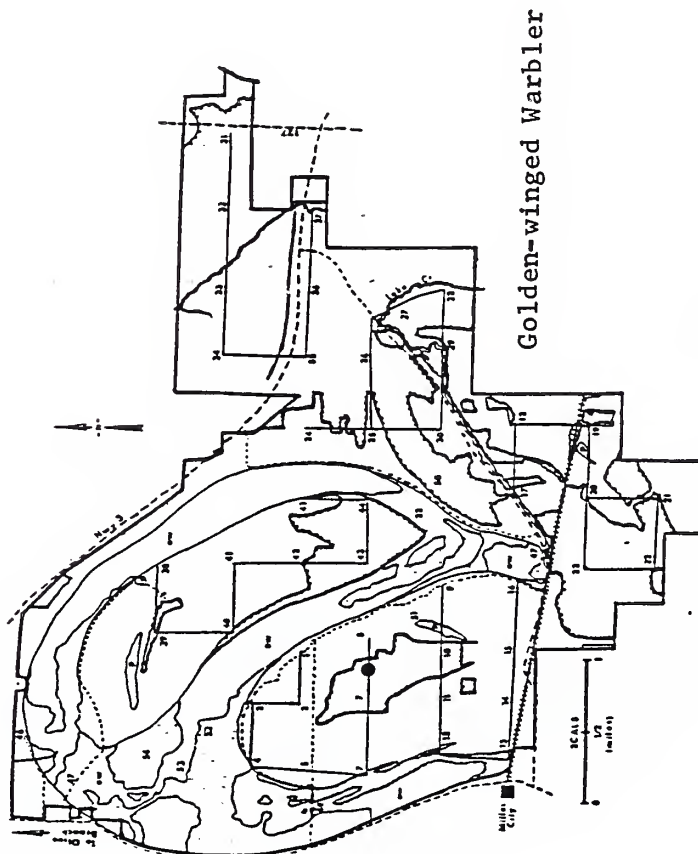
Prothonotary Warbler



Blue-winged Warbler

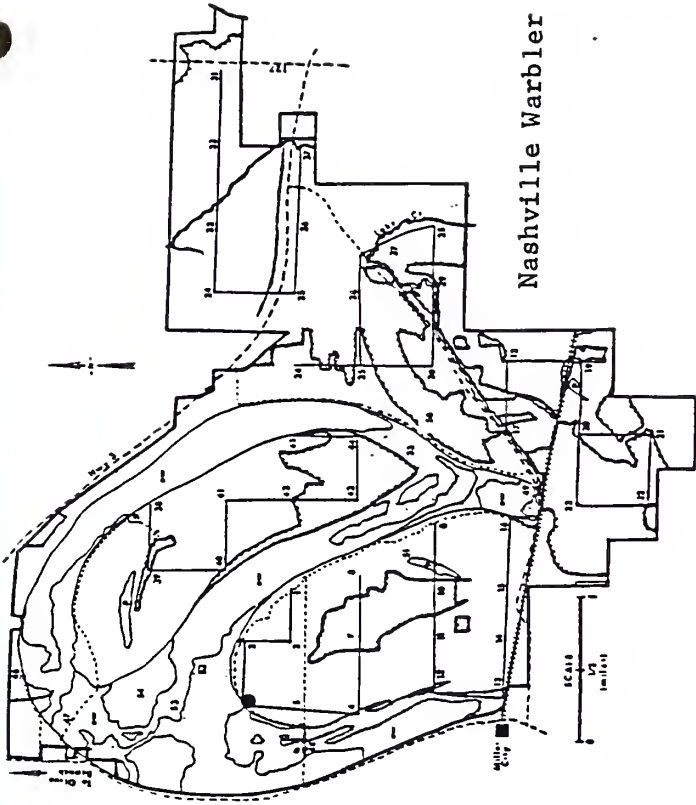


Black and White Warbler

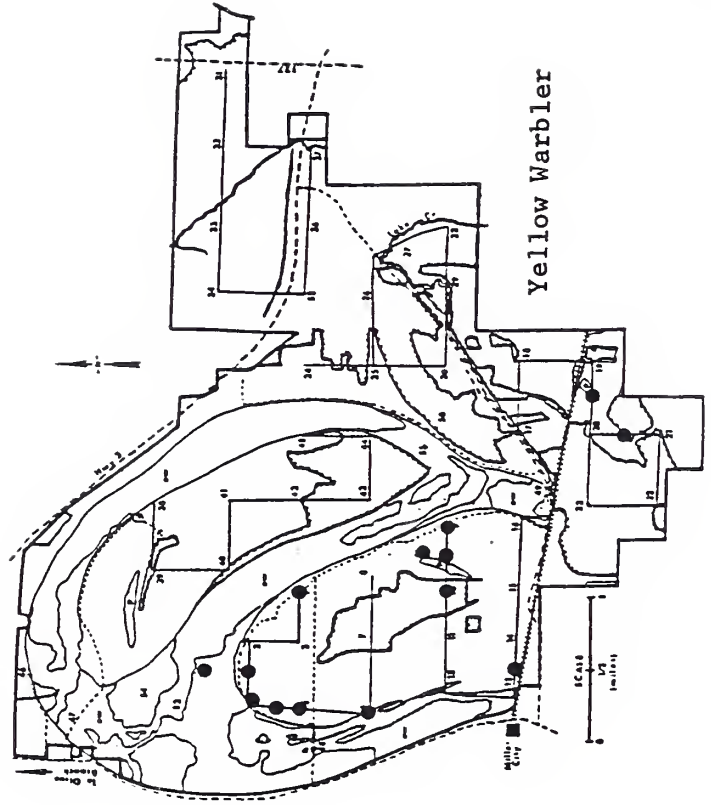


Golden-winged Warbler

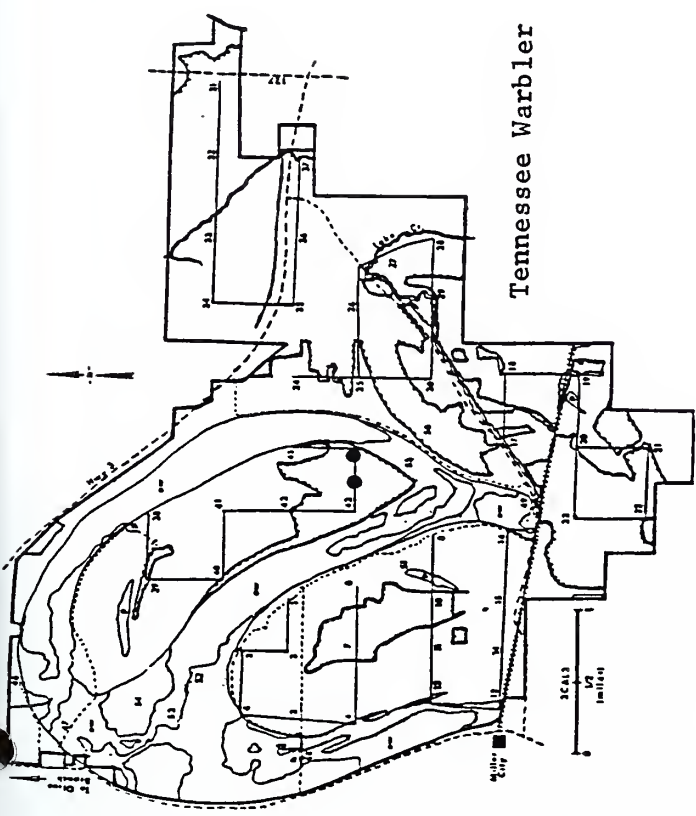




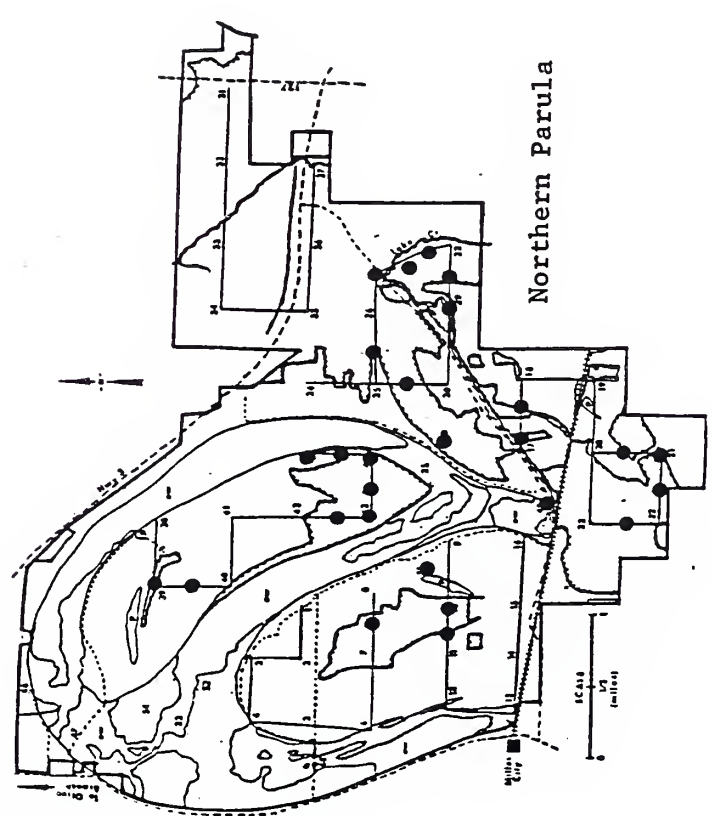
Nashville Warbler



Yellow Warbler

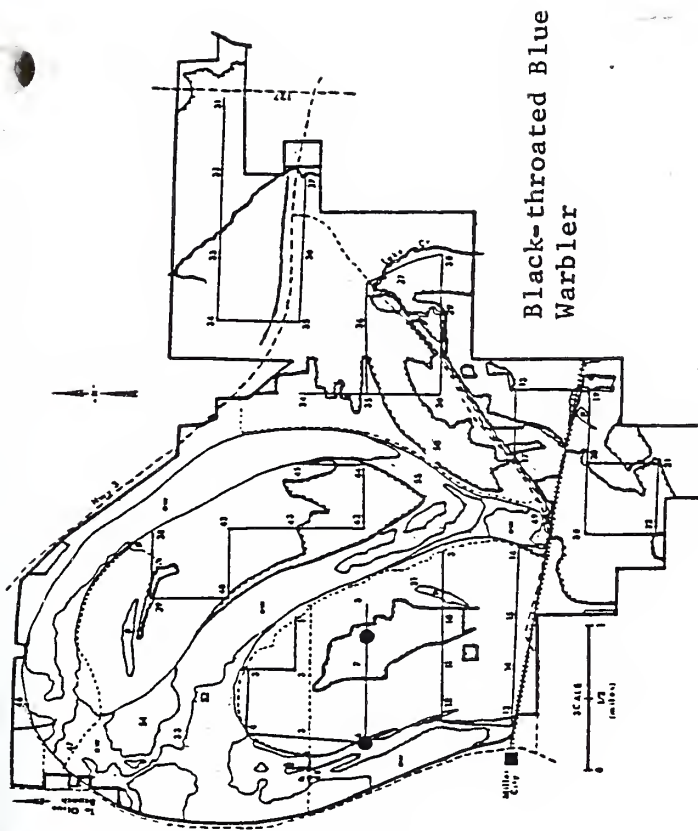


Tennessee Warbler

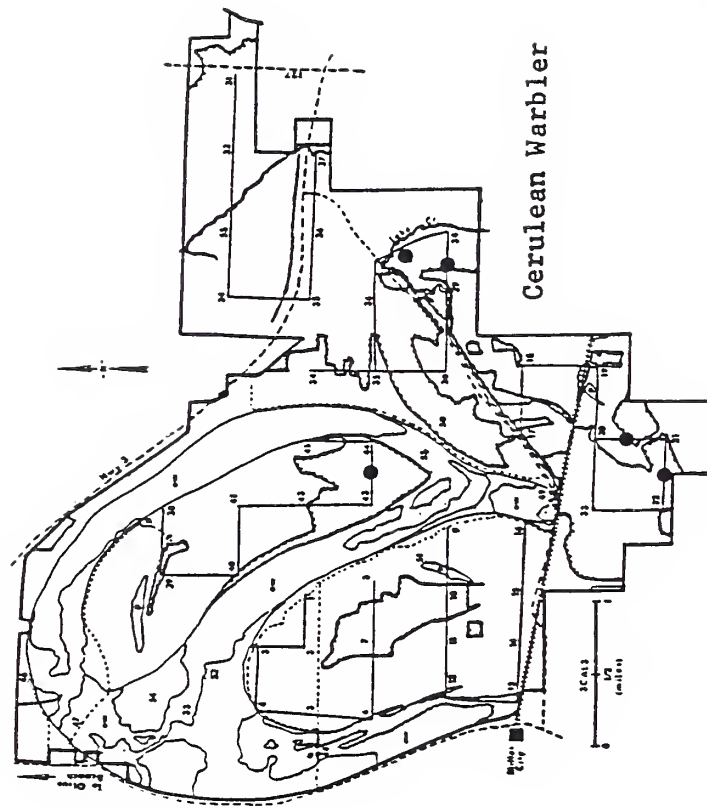


Northern Parula

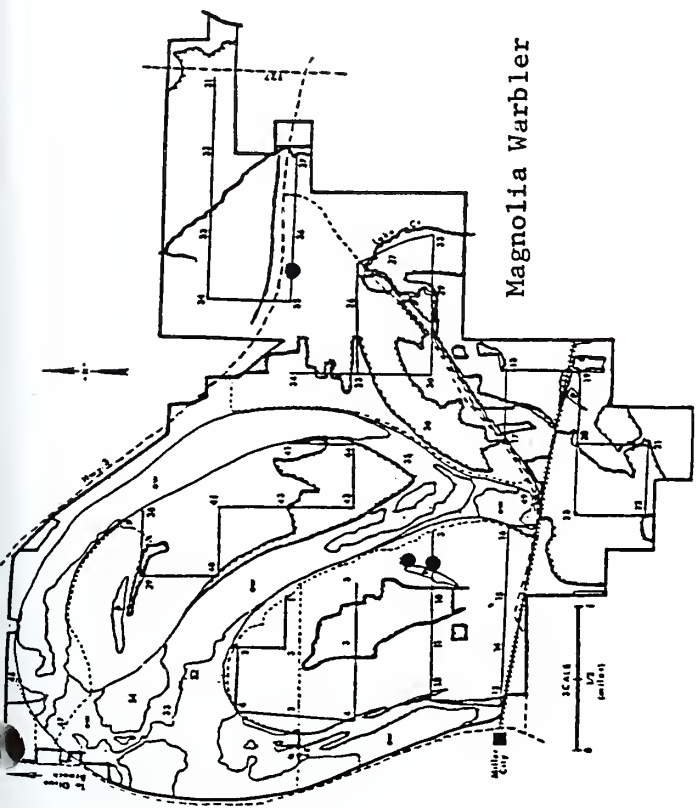




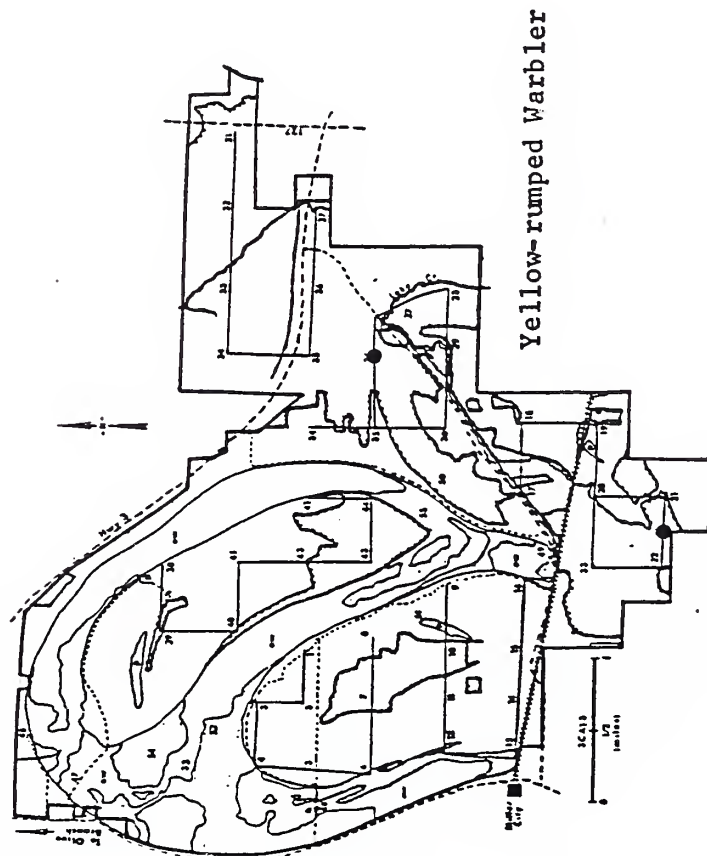
Black-throated Blue Warbler



Cerulean Warbler



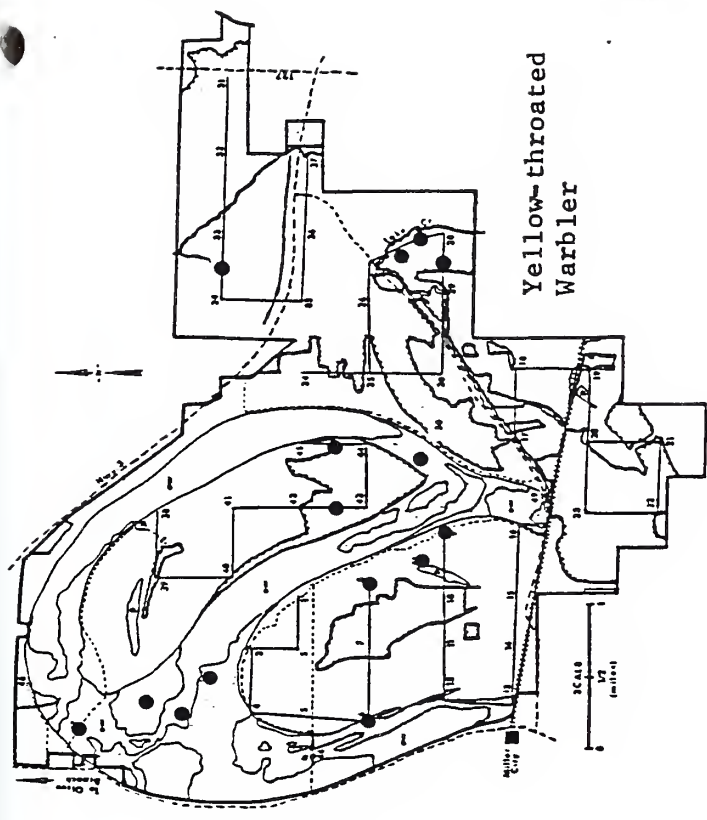
Magnolia Warbler



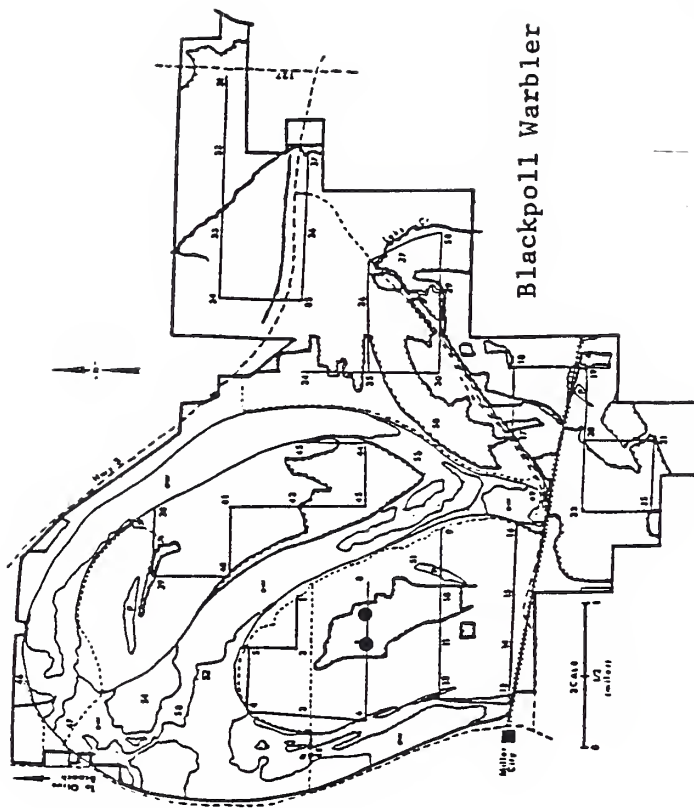
Yellow-rumped Warbler



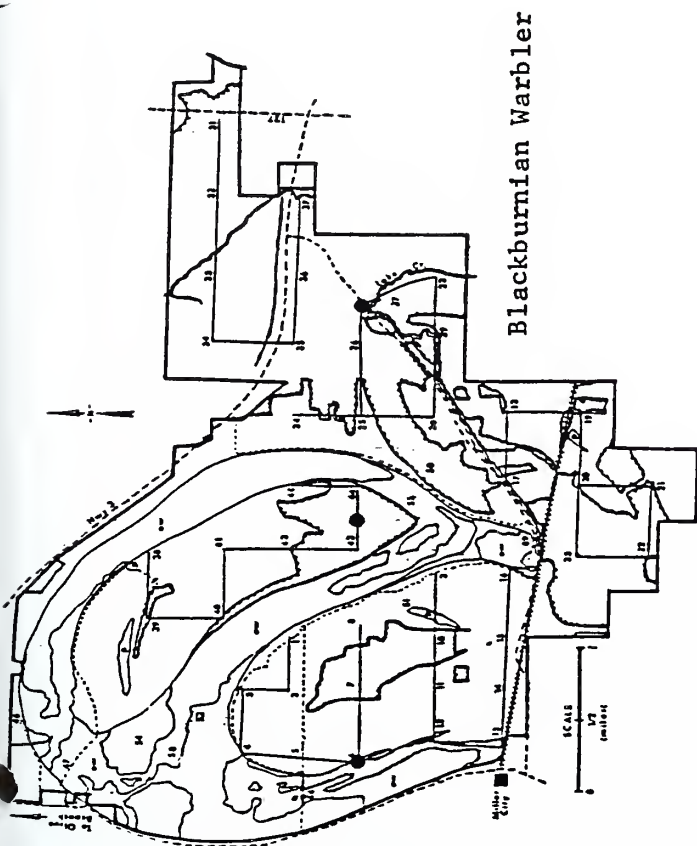




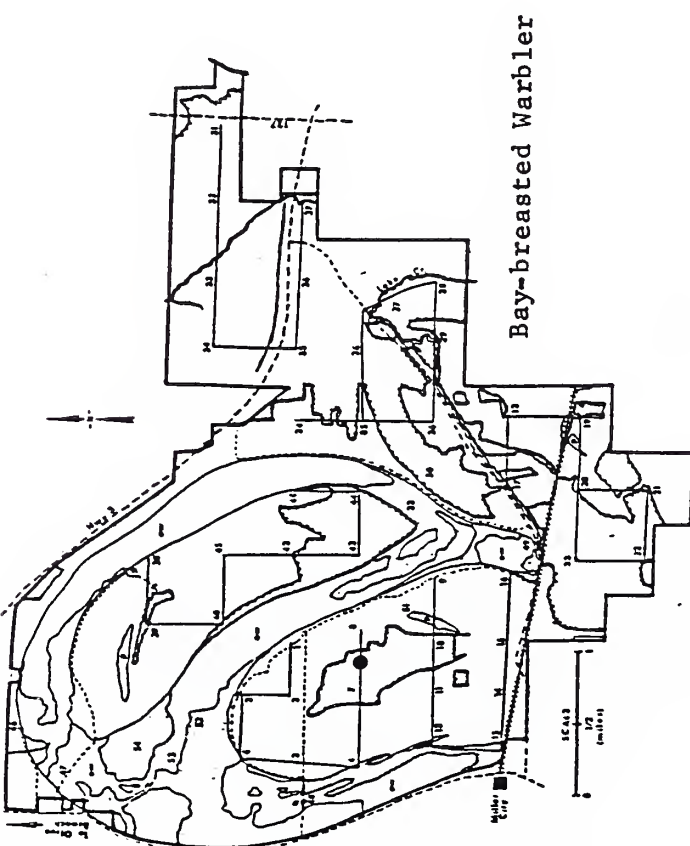
Yellow-throated  
Warbler



Blackpoll Warbler



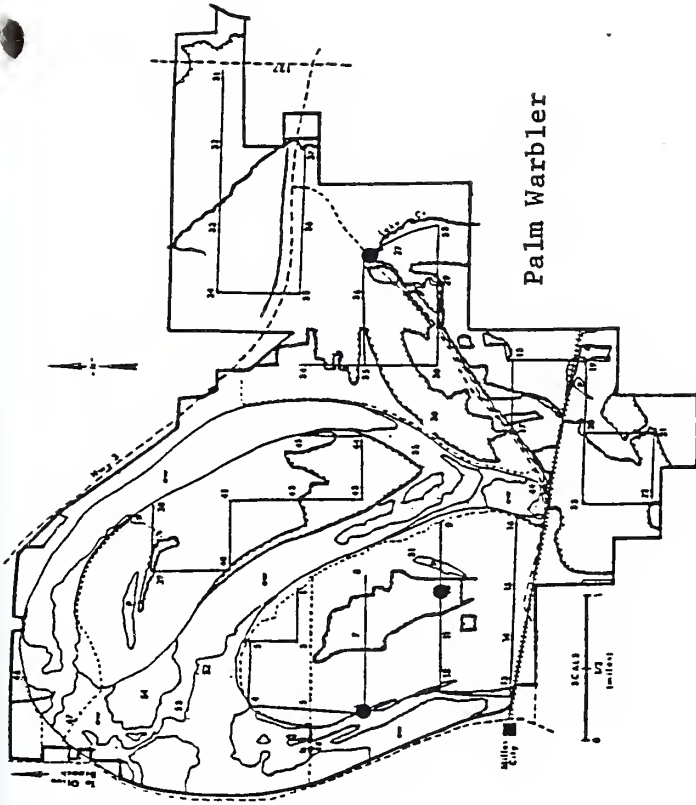
Blackburnian Warbler



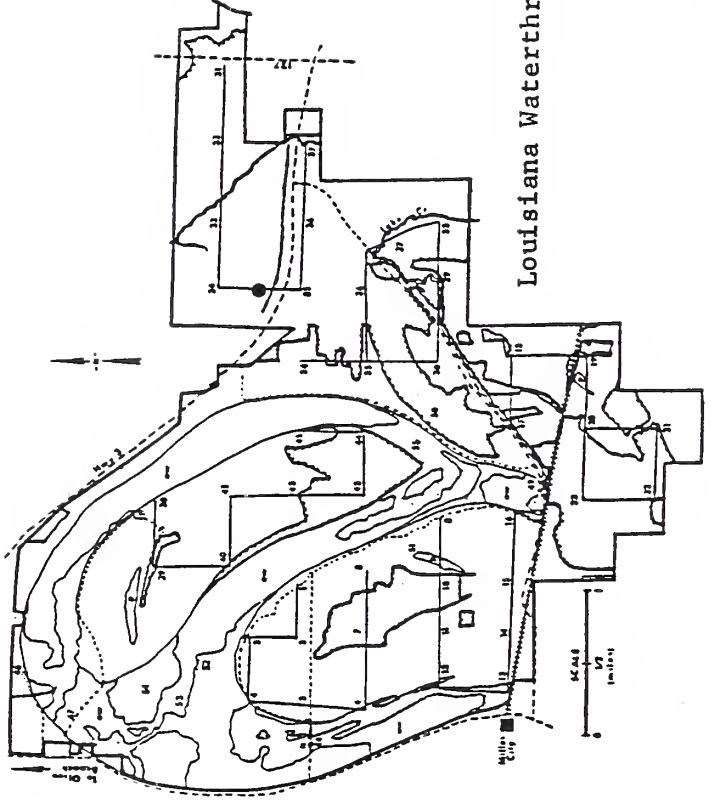
Bay-breasted Warbler



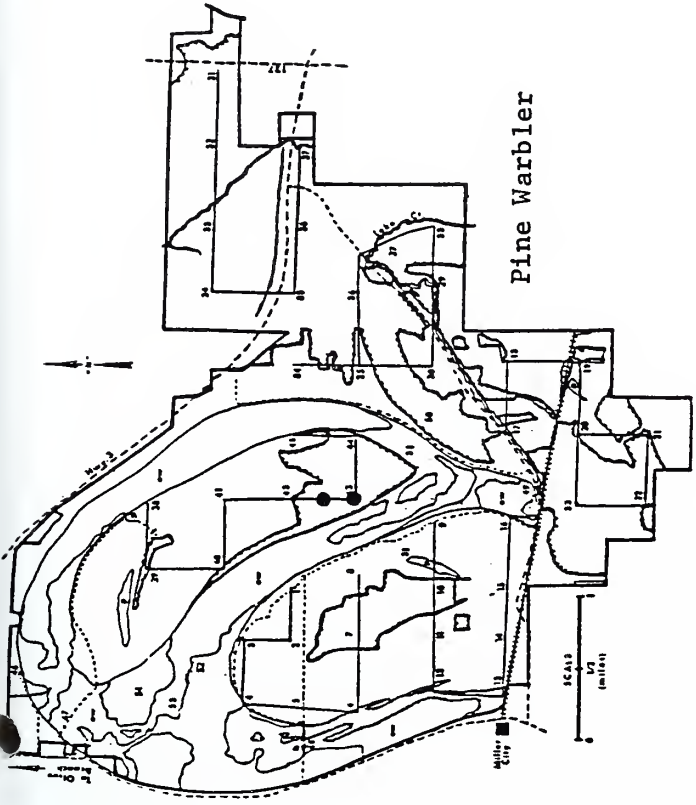




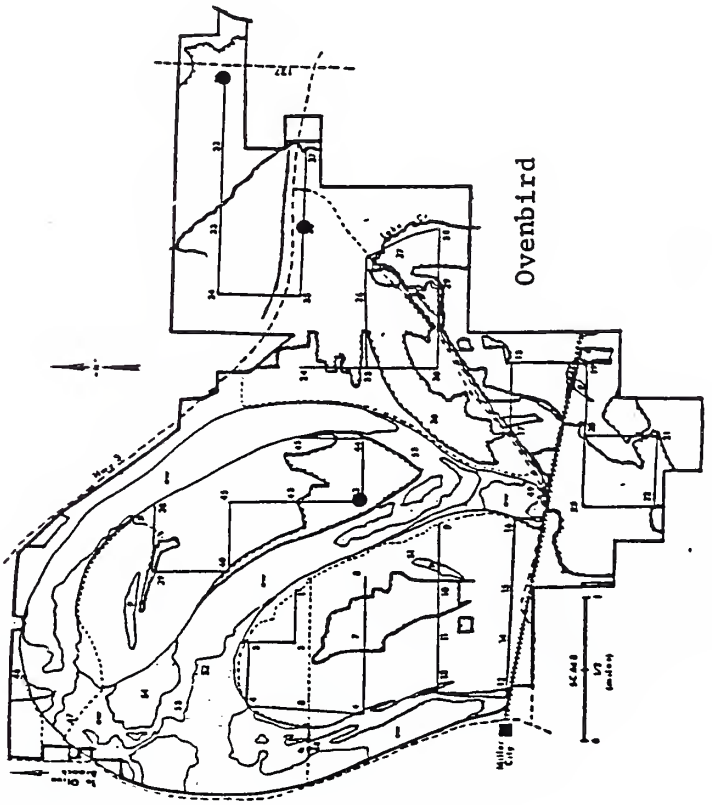
Palm Warbler



Louisiana Waterthrush

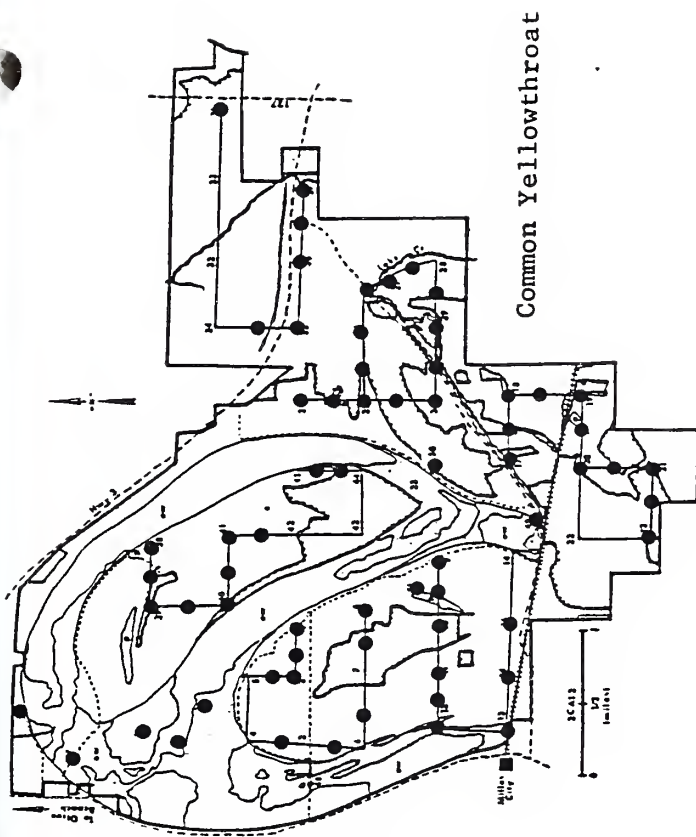


Pine Warbler

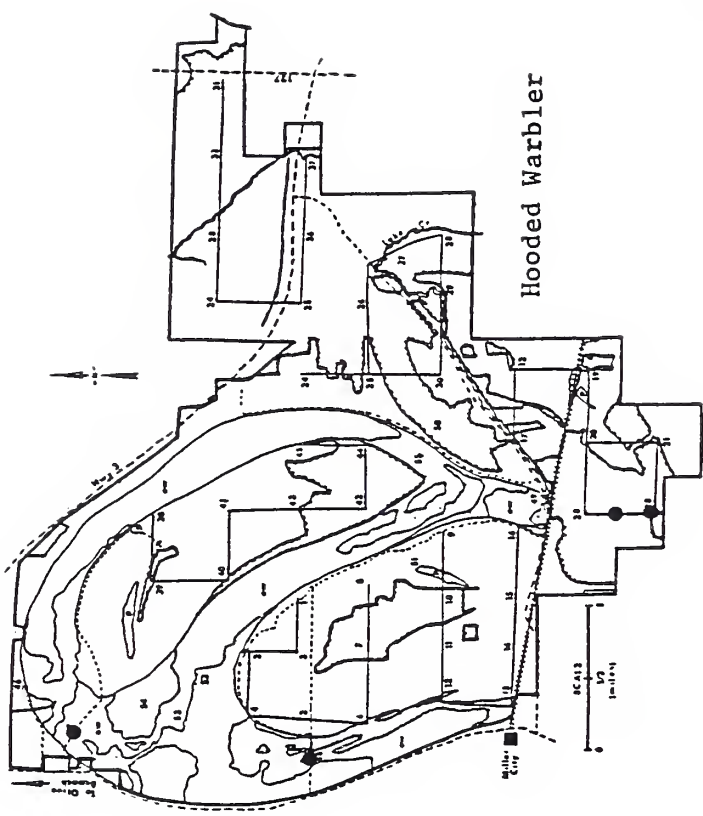


Ovenbird

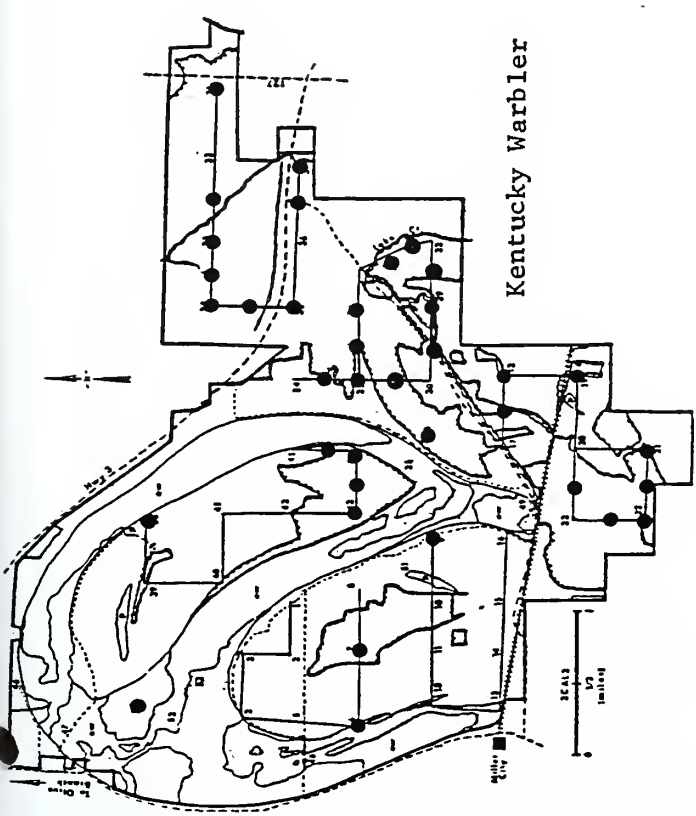




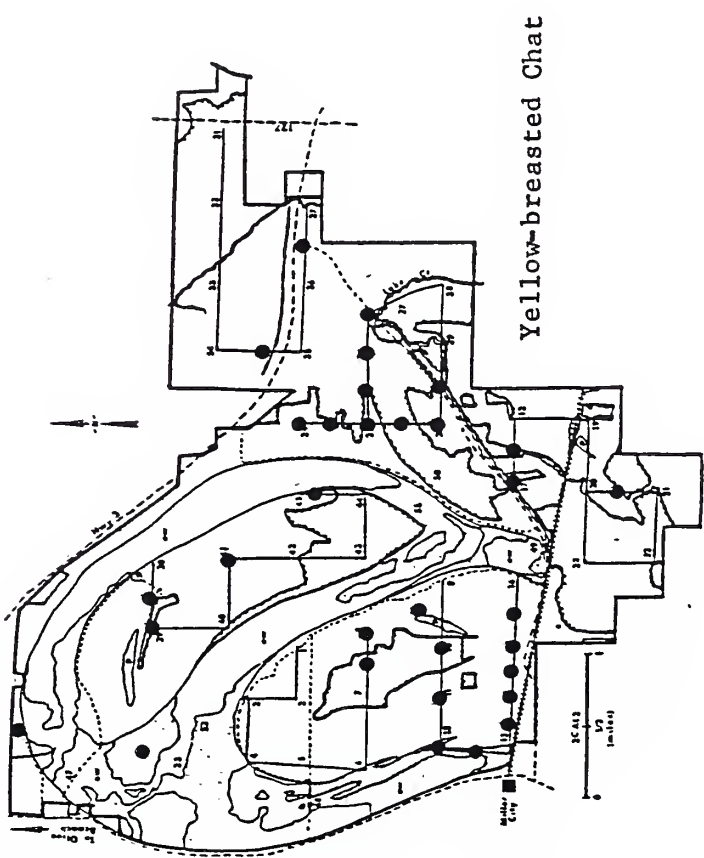
Common Yellowthroat



Hooded Warbler

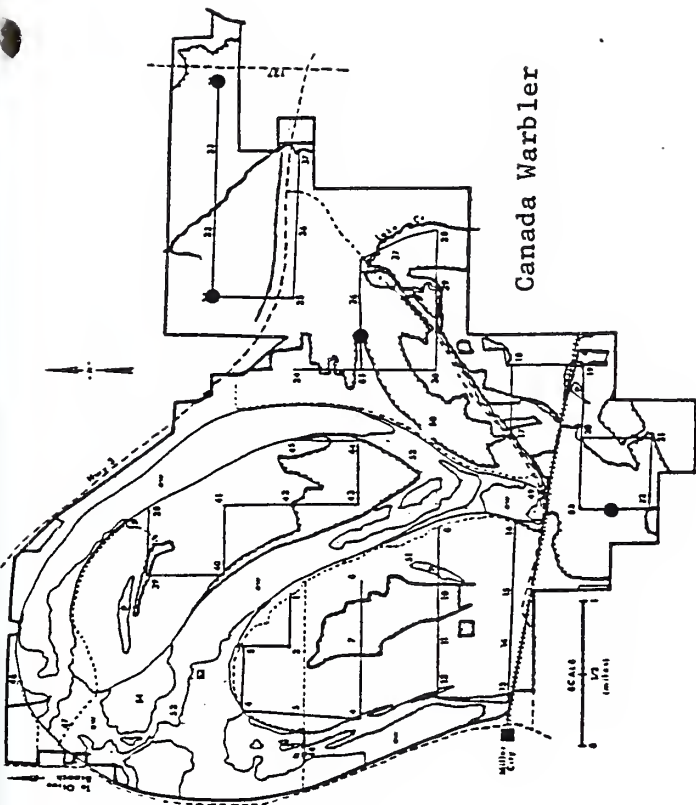


Kentucky Warbler

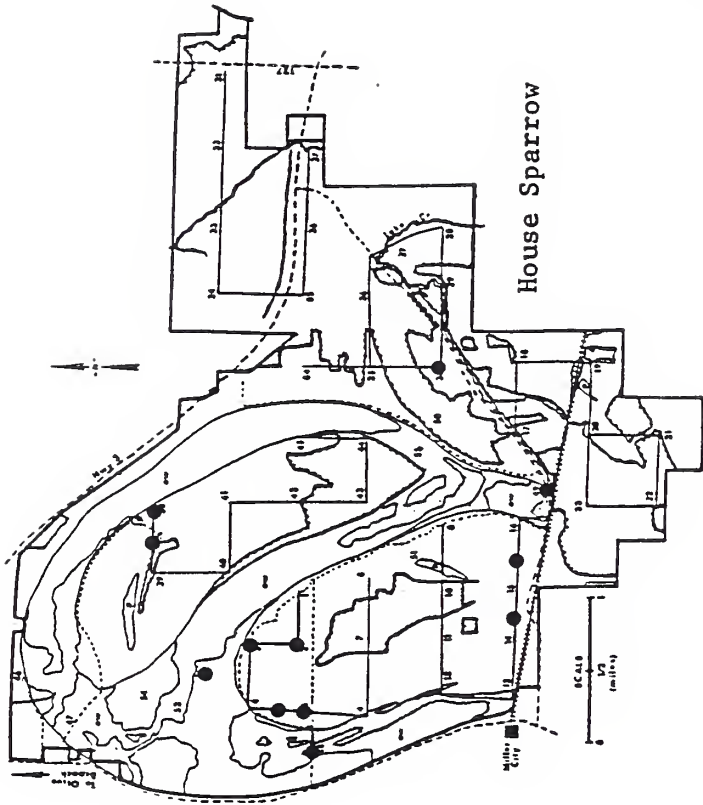


Yellow-breasted Chat

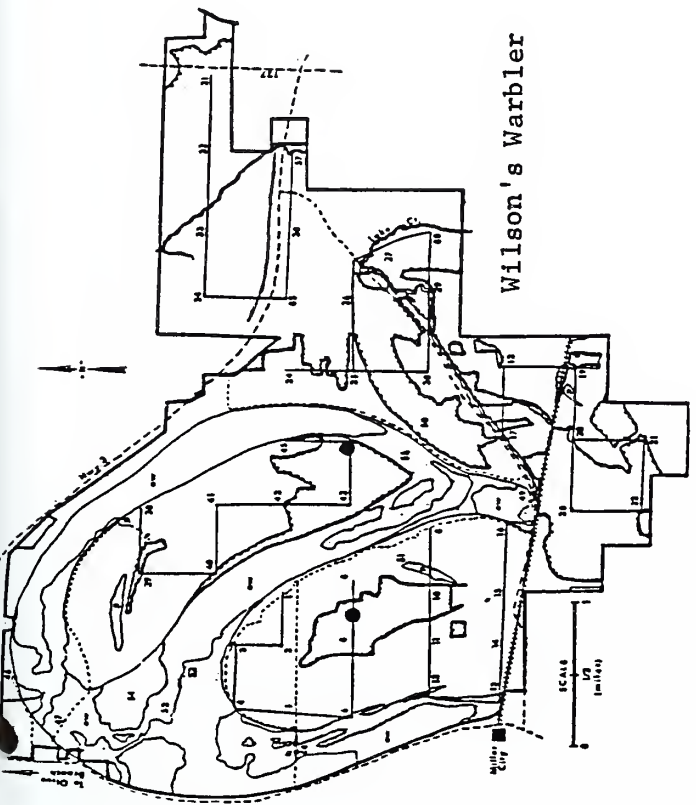




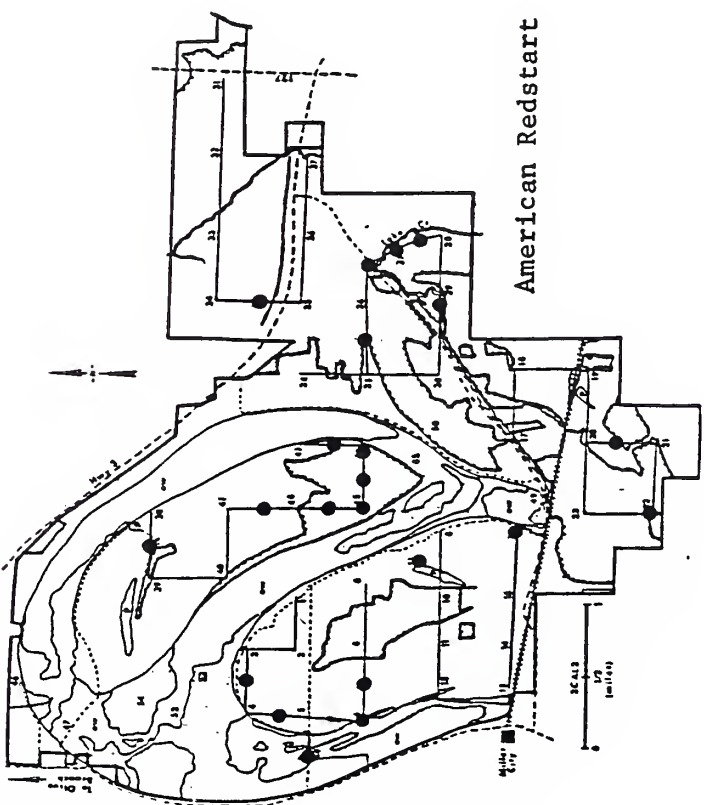
Canada Warbler



House Sparrow



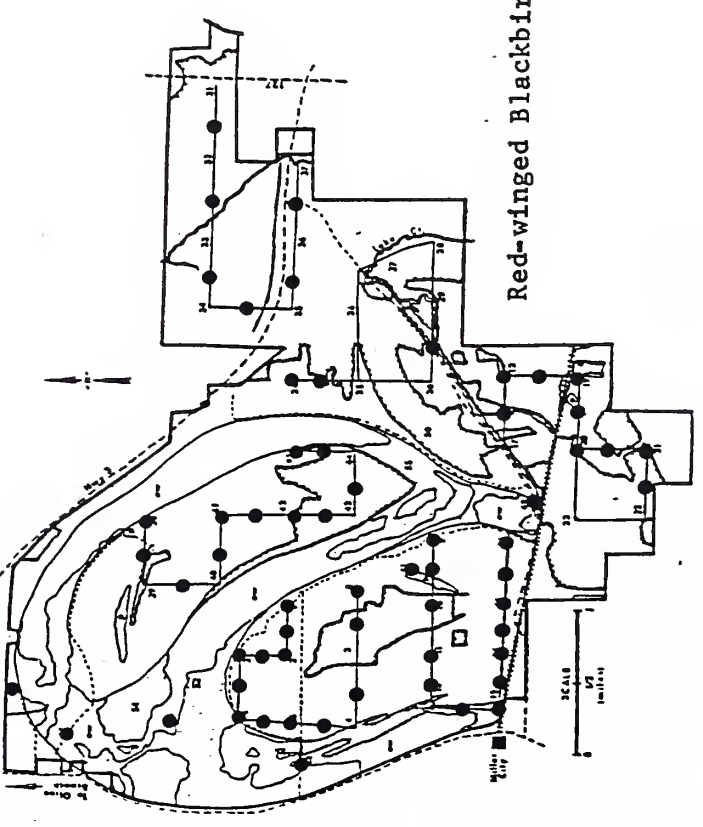
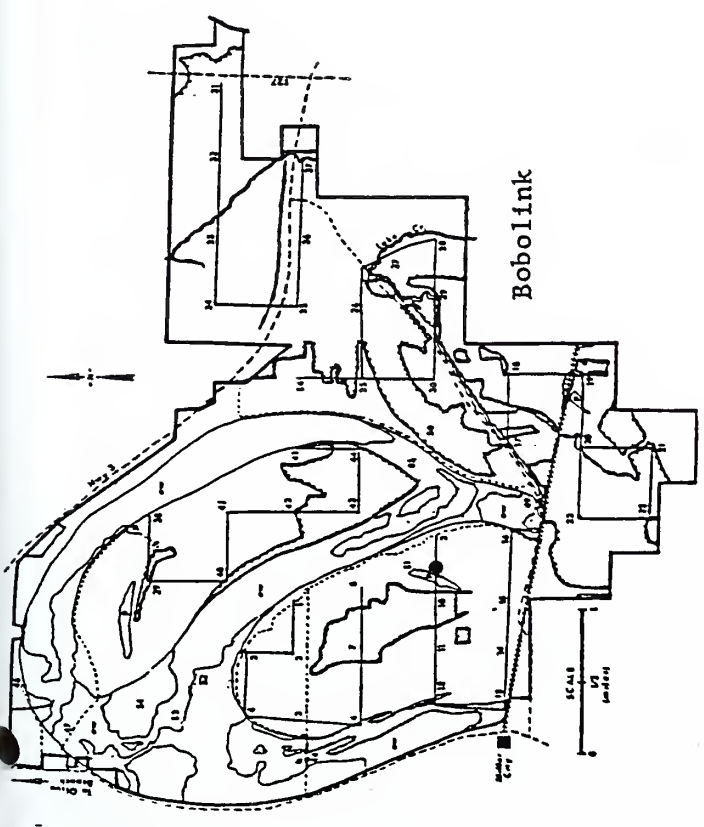
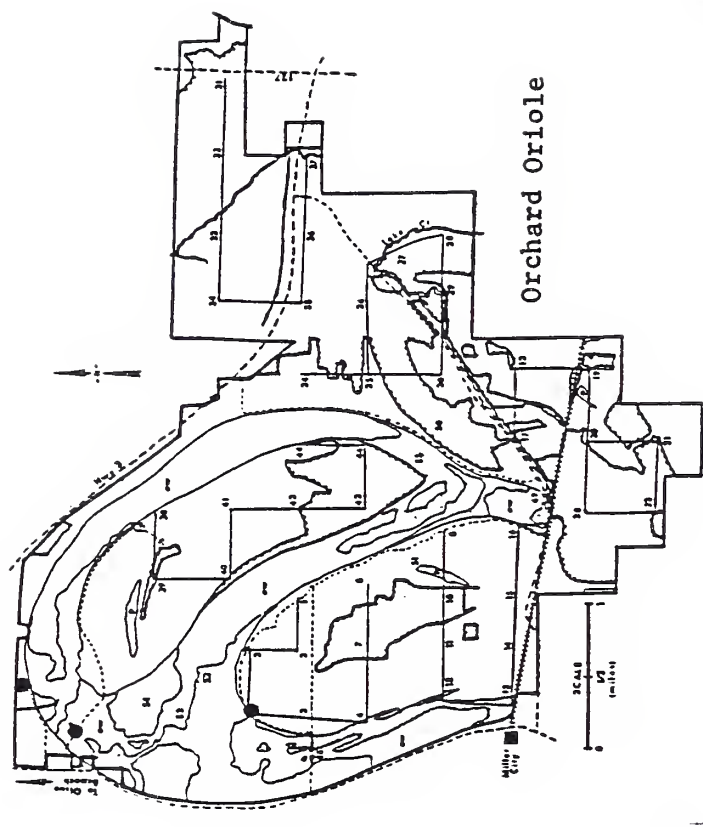
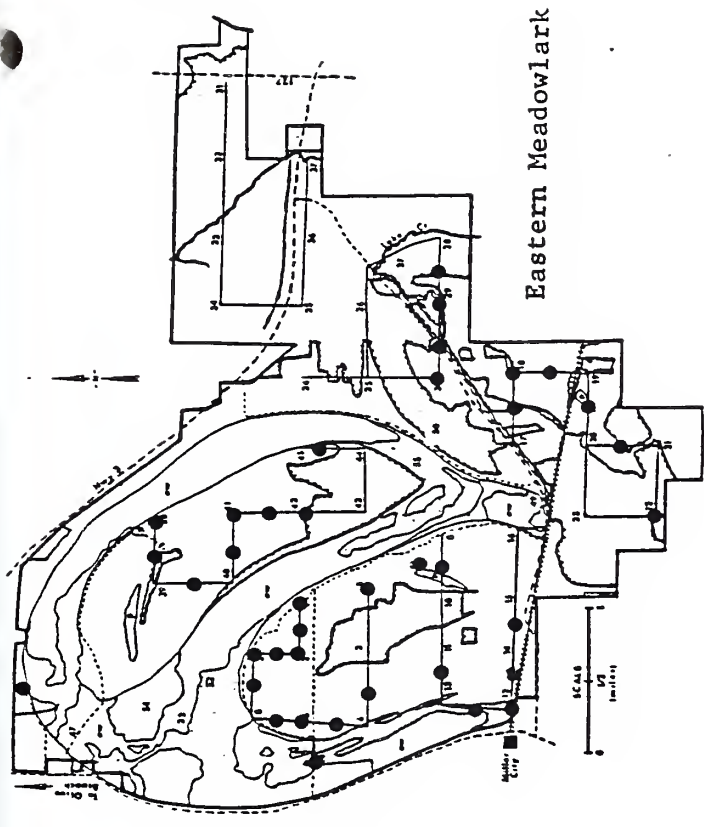
Wilson's Warbler



American Redstart

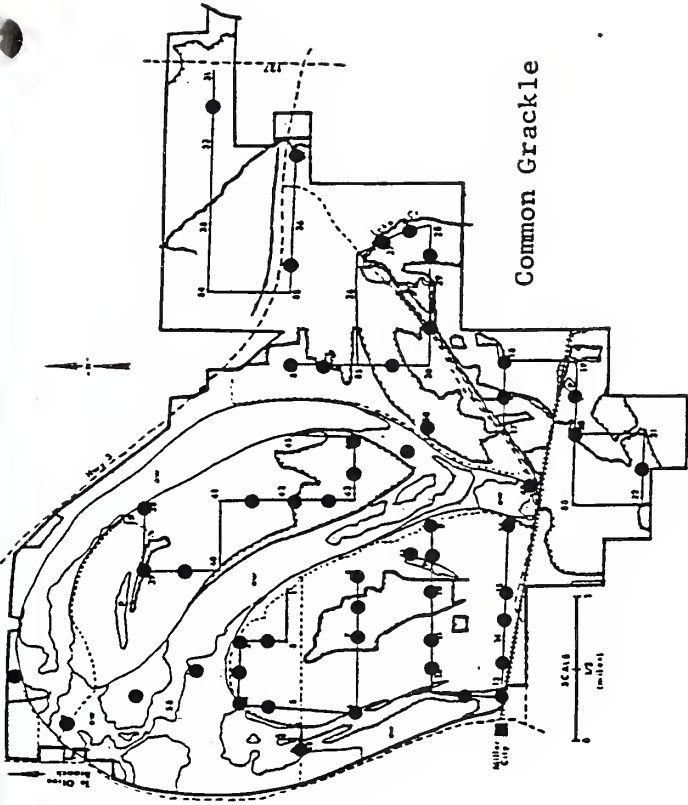




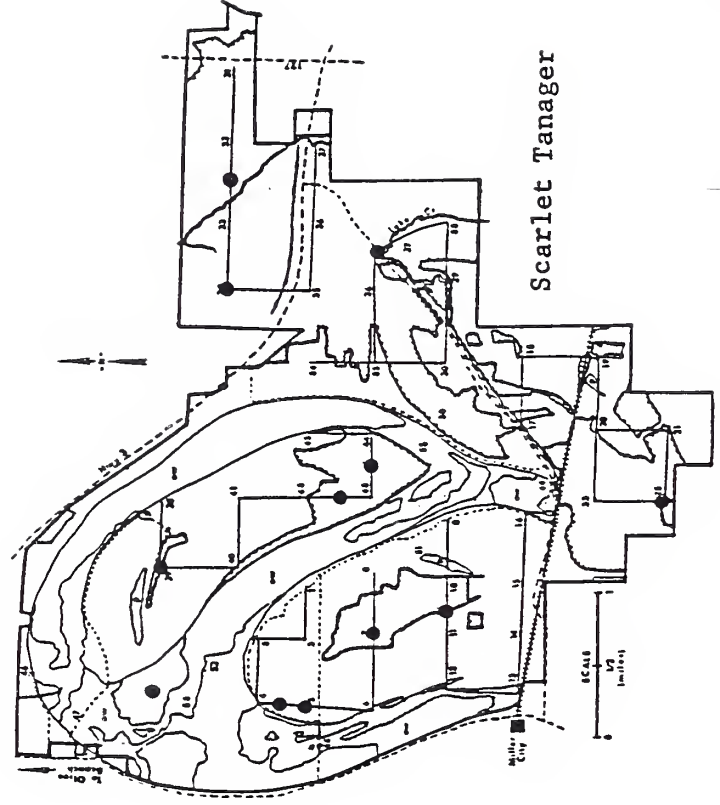




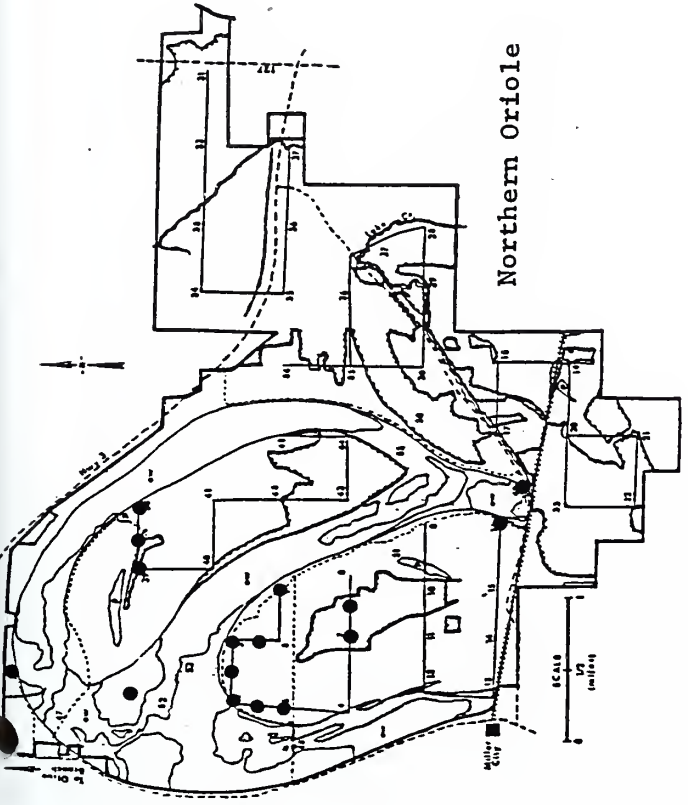




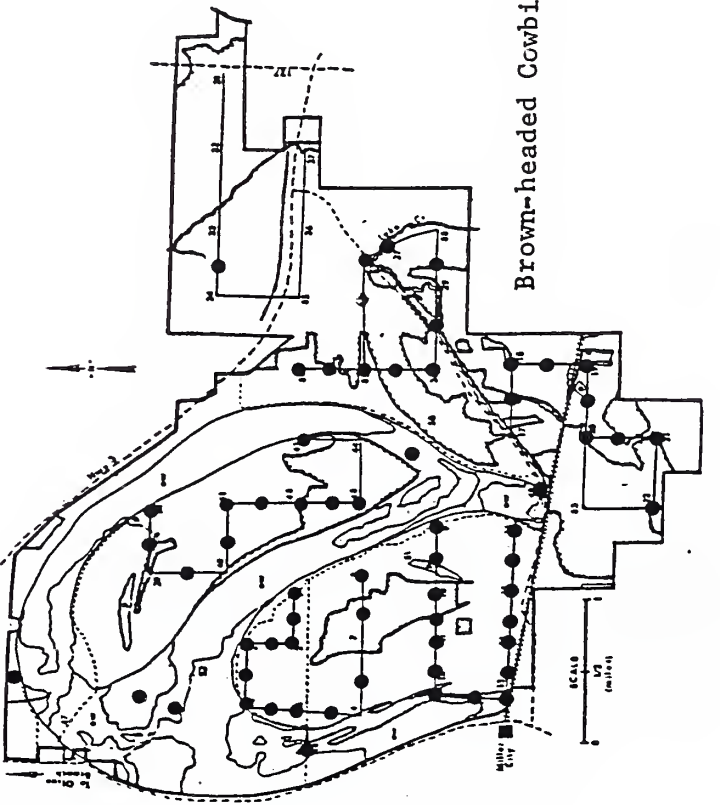
Common Grackle



Scarlet Tanager

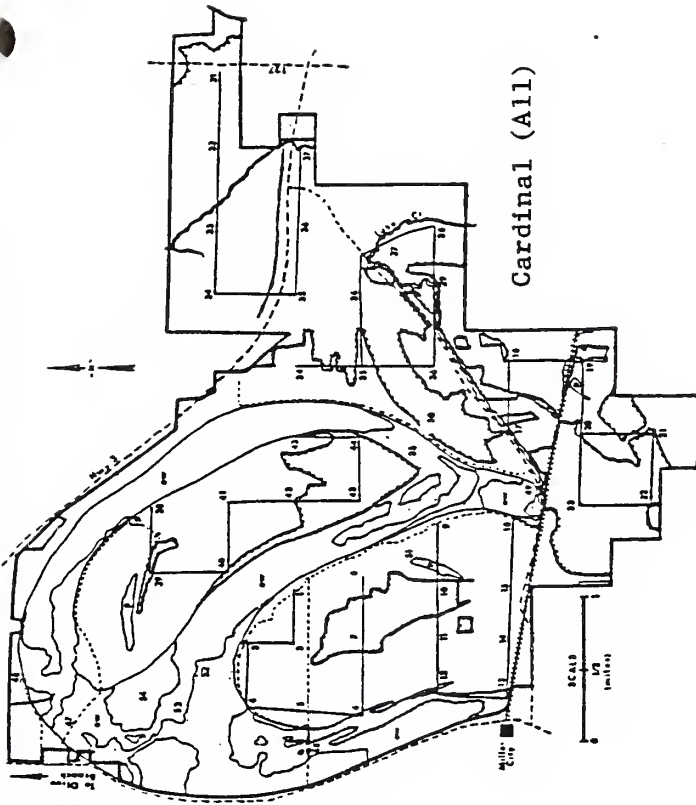


Northern Oriole

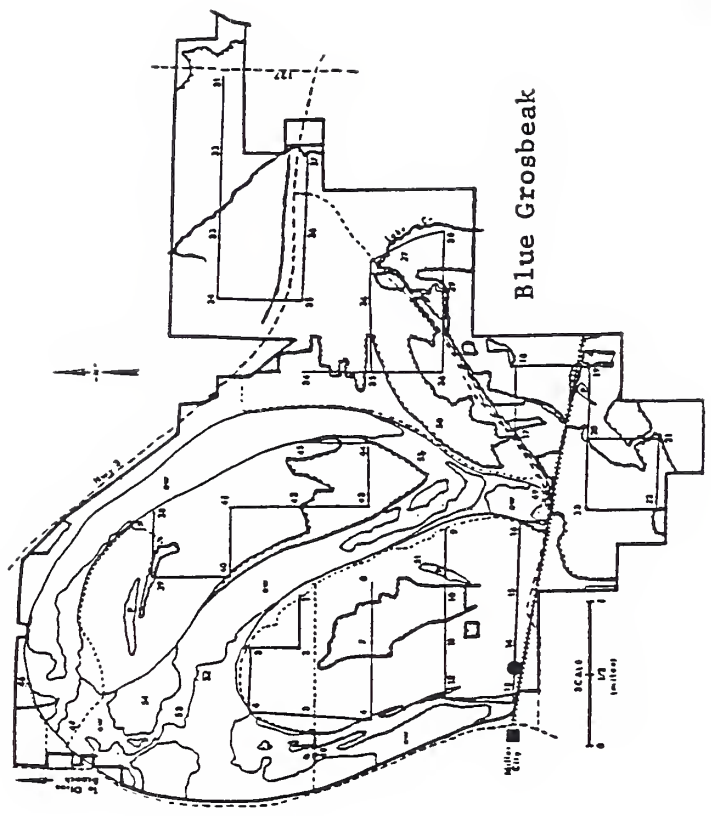


Brown-headed Cowbird

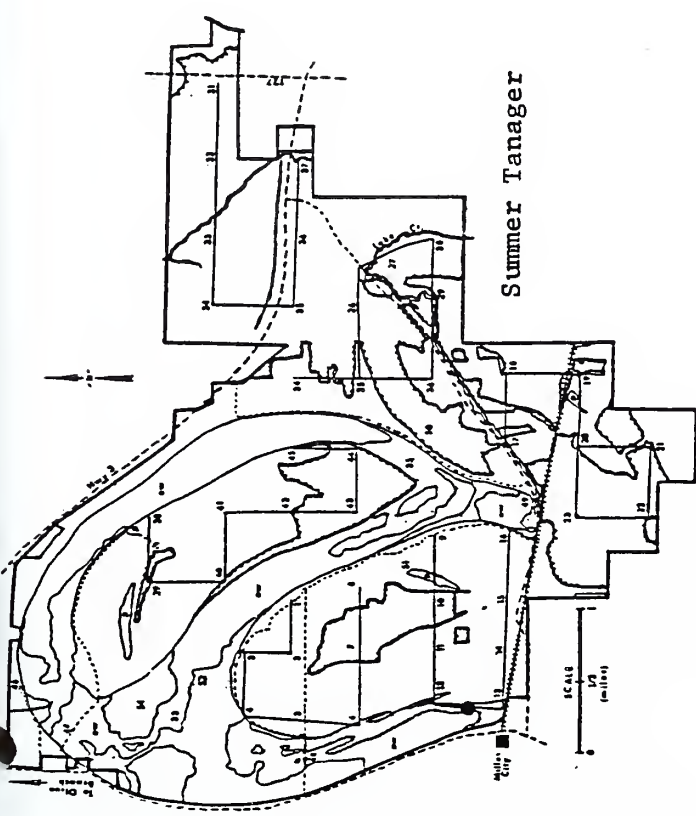




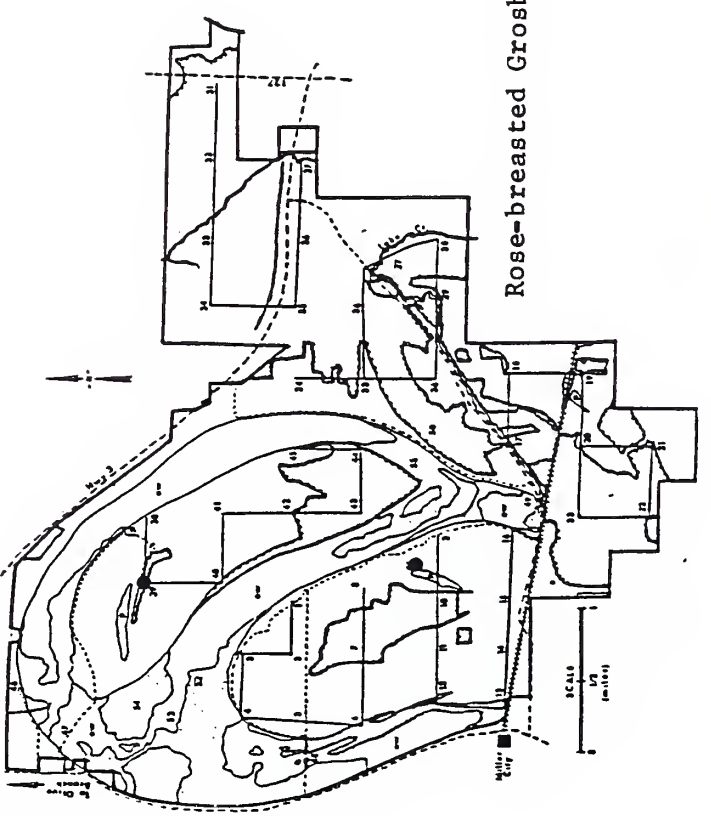
Cardinal (All)



Blue Grosbeak

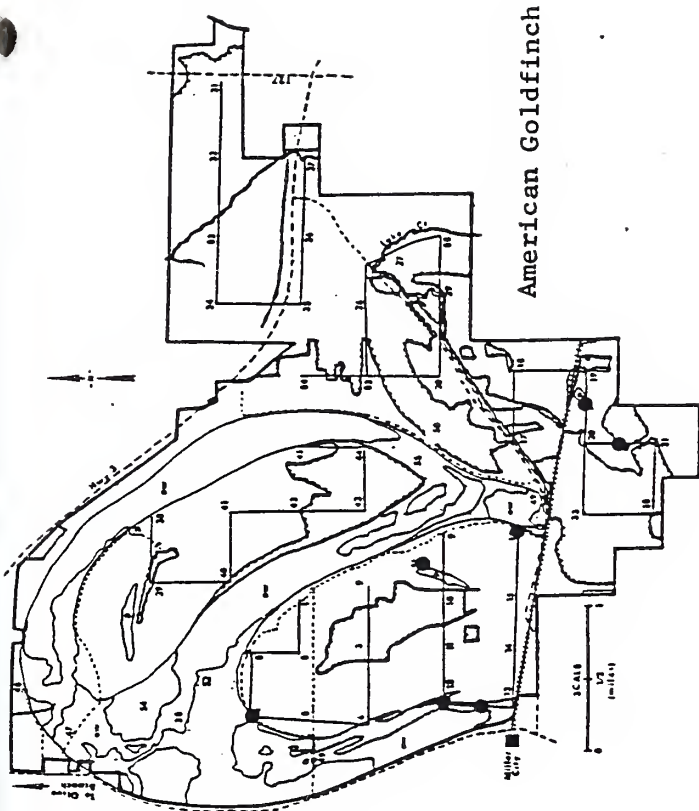


Summer Tanager

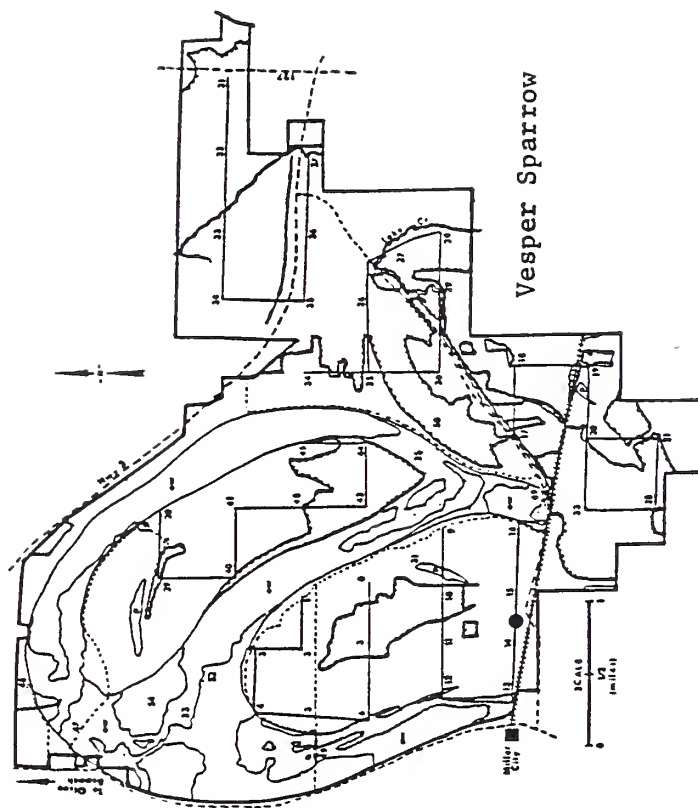


Rose-breasted Grosbeak

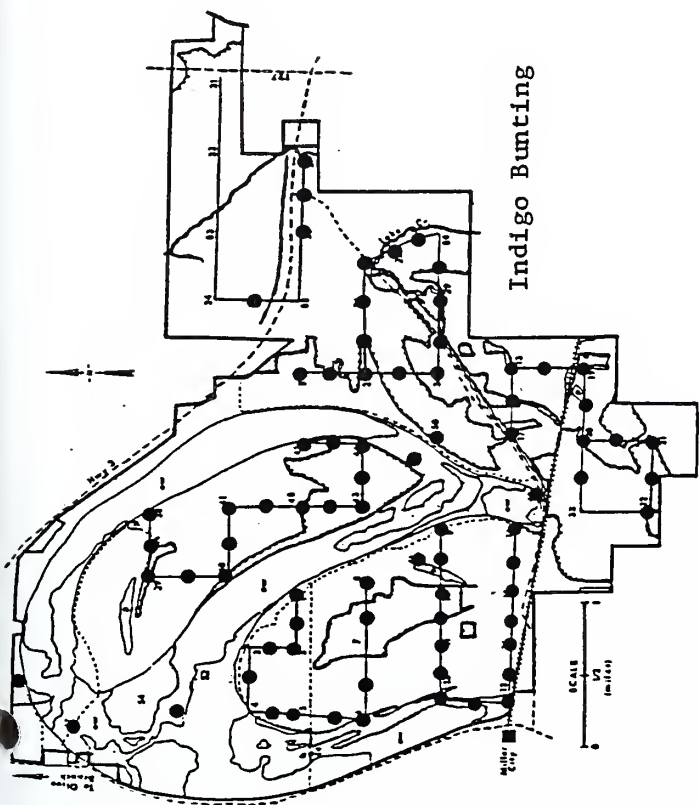




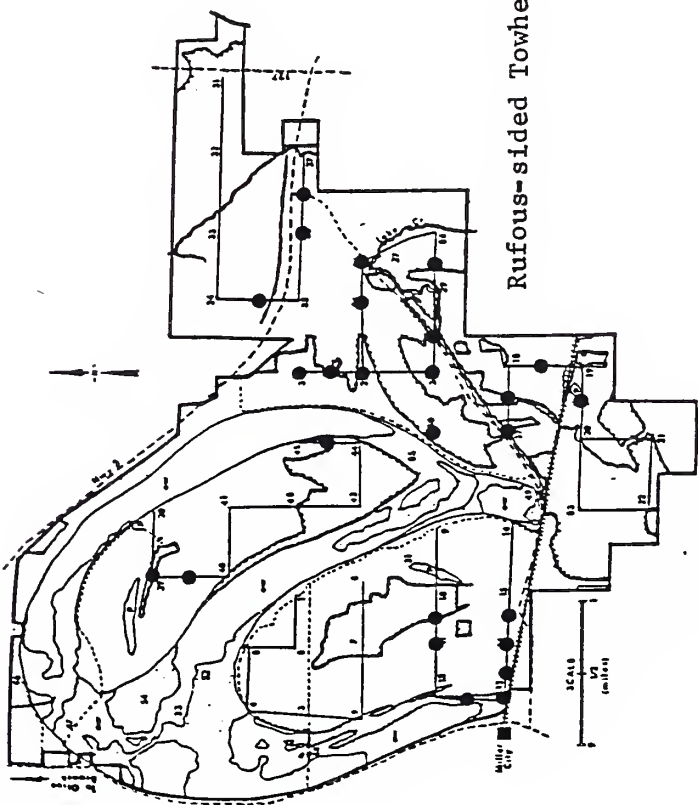
American Goldfinch



Vesper Sparrow



Indigo Bunting

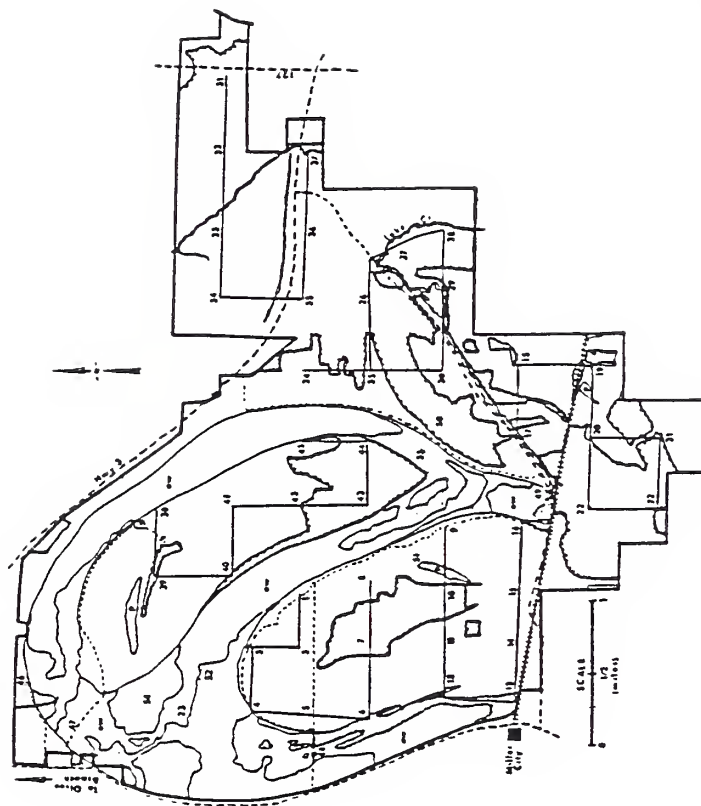
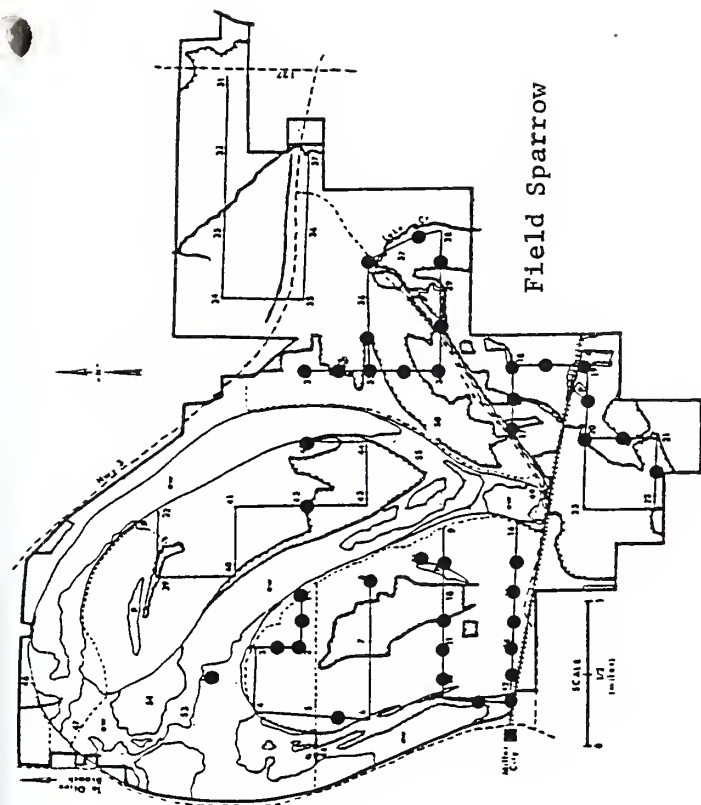


Rufous-sided Towhee

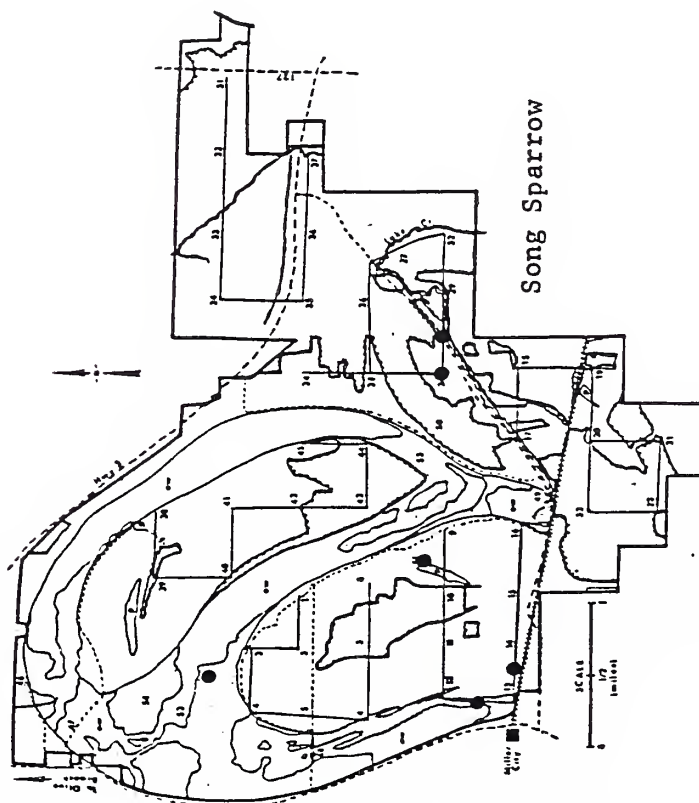
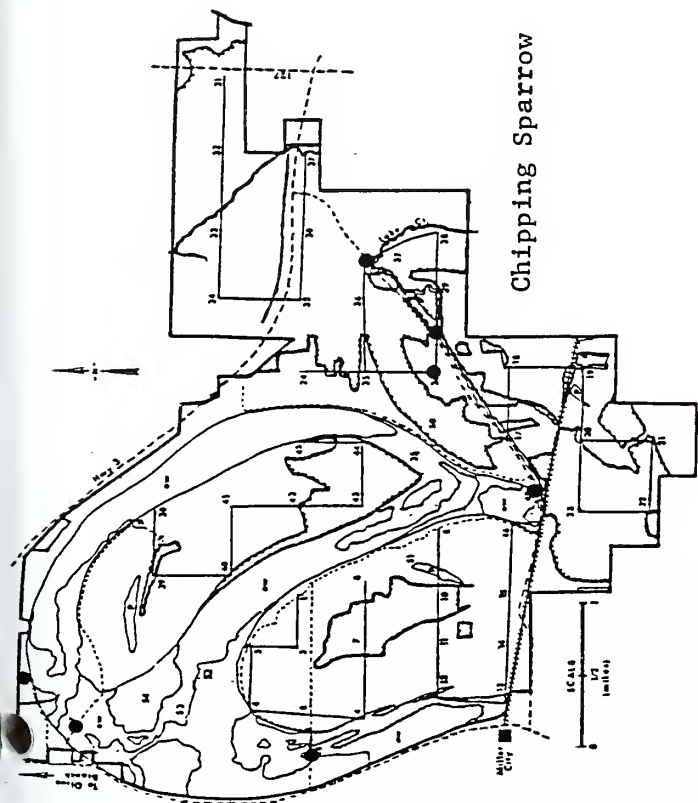




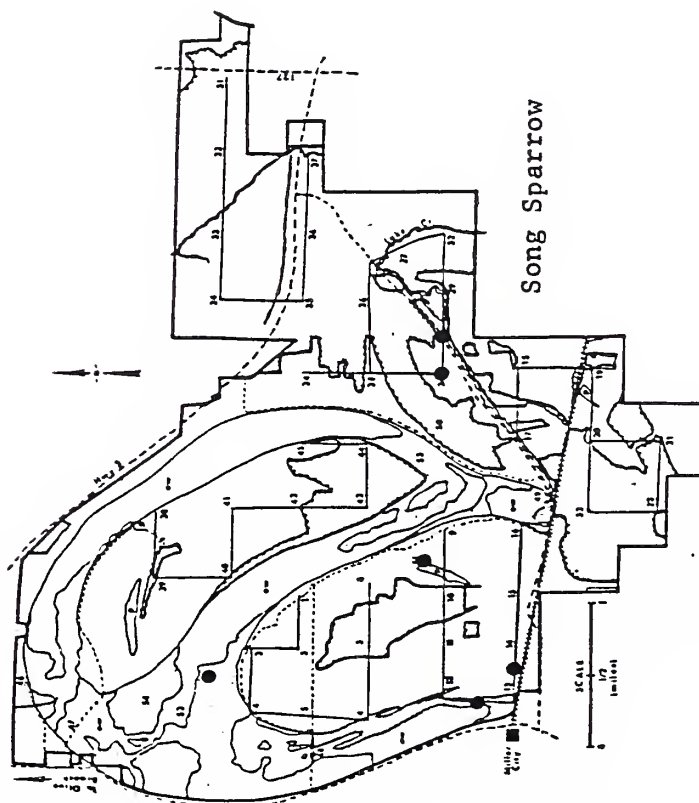
Field Sparrow



Chipping Sparrow



Song Sparrow







APPENDIX B

Vegetation Synopses



## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Transect Set 1 Census Stop # 1

Page 1 of 55

Observer S. A. Evans

Community Type of Census Stop Developed Land  
(Roadside)

Date 5/5/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairies</u>	<u>Marsh</u>	<u>Lake Michigan</u>
<u>Sand Forest</u>	<u>Prairie</u>	<u>Swamp</u>	<u>Reservoir</u>
<u>Floodplain Forest</u>	<u>Sand Prairie</u>	<u>Bog</u>	<u>Impoundment</u>
<u>Flatwoods</u>	<u>Gravel Prairie</u>	<u>Fen</u>	<u>Stream</u>
	<u>Hill Prairie</u>	<u>Sand Savanna</u>	<u>Natural Lake</u>
	<u>Shrub Prairie</u>	<u>Barren</u>	<u>Sedge Meadow</u>
	<u>Forageland</u>	<u>Successional Field</u>	<u>Developed Land</u>
<u>Cropland</u>			



## STRATUM RANKING FORM

### Site Horseshoe Lake Conservation Area

	<u>Transect Set</u> <u>1</u>	<u>Census Stop #</u> <u>2</u>
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Page 2 of 55Observer S. A. Evans

Community Type of Census Stop Cropland  
(recently plowed)

Date 5/5/82

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
<u>Sand Forest</u>	<u>Sand Prairie</u>	<u>Savanna</u>	<u>Swamp</u>	<u>Reservoir</u>
<u>Floodplain Forest</u>	<u>Gravel Prairie</u>	<u>Savanna</u>	<u>Bog</u>	<u>Impoundment</u>
<u>Flatwoods</u>	<u>Hill Prairie</u>	<u>Sand Savanna</u>	<u>Fen</u>	<u>Stream</u>
	<u>Shrub Prairie</u>	<u>Barren</u>	<u>Sedge Meadow</u>	<u>Natural Lake</u>
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>



## Site Horseshoe Lake Conservation Area

Transect Set 1

Census Stop # 3

Page 3 of 55

Observer S. A. Evans

Community Type of Census Stop Developed Land

Date 5/5/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
<u>Sand Forest</u>	<u>Sand Prairie</u>	<u>Savanna</u>	<u>Swamp</u>	<u>Reservoir</u>
<u>Floodplain Forest</u>	<u>Gravel Prairie</u>	<u>Savanna</u>	<u>Bog</u>	<u>Impoundment</u>
<u>Flatwoods</u>	<u>Hill Prairie</u>	<u>Sand Savanna</u>	<u>Fen</u>	<u>Stream</u>
	<u>Shrub Prairie</u>	<u>Barren</u>	<u>Sedge Meadow</u>	<u>Natural Lake</u>
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>





Site Horseshoe Lake Conservation Area

Transect Set 1

Census Stop # 4

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Observer S. A. Evans

Community Type of Census Stop Developed Land

Date 5/5/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
<u>Sand Forest</u>	Sand Prairie	<u>Savanna</u>	Swamp	Reservoir
<u>Floodplain Forest</u>	Gravel Prairie	Savanna	Bog	Impoundment
<u>Flatwoods</u>	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>



Site Horseshoe Lake Conservation Area

Transect Set 1 Census Stop # 5

Page 5 of 55Observer S. A. Evans

Community Type of Census Stop Cropland

Date 5/5/82

(Recently plowed).

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairies</u>	<u>Marsh</u>	<u>Lake Michigan</u>
Sand Forest	Prairie	Swamp	Reservoir
Floodplain Forest	Sand Prairie	Bog	Impoundment
Flatwoods	Gravel Prairie	Fen	Stream
	Hill Prairie	Sedge Meadow	Natural Lake
	Shrub Prairie		
<u>Cropland</u>	<u>Forageland</u>		
		Successional Field	Developed Land



Site Horseshoe Lake Conservation Area

Transect Set 1

Census Stop # 6

Page 6 of 55

Observer S. A. Evans

Community Type of Census Stop Floodplain Forest

Date 5/5/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

Forests	Prairies	COMMUNITY TYPES	Wetland	Surface Water
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
Cropland	Forageland	Successional Field		Developed Land





Site Horseshoe Lake Conservation Area

Transect Set 1

Census Stop # 7

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Observer  
S. A. Evans

Community Type of Census Stop Floodplain Forest

Date 5/5/82

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairies</u>	<u>Marsh</u>	<u>Lake Michigan</u>
Sand Forest	Prairie	Swamp	Reservoir
Floodplain Forest	Sand Prairie	Bog	Impoundment
Flatwoods	Gravel Prairie	Fen	Stream
	Hill Prairie	Sedge Meadow	Natural Lake
	Shrub Prairie		
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>	<u>Developed Land</u>





Observer S. A. Evans

Community Type of Census Stop Cropland

Date 5/5/82

(Recently plowed)

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>



Date 5/10/82

1 Subordinate, only one individual noted

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>



## STRATUM RANKING FORM

Horseshoe Lake Conservation Area  
Site

Transect Set 2

Census Stop #	10
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Observer S. A. Evans

Community Type of Census Stop Floodplain Forest

Date 5/10/82

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
<u>Cropland</u>	Forageland	Successional Field		Developed Land





### Site Horseshoe Lake Conservation Area

Transect Set 2

Census Stop # 11

Page 11 of 55

Observer S. A. Evans

Community Type of Census Stop Cropland

Date 5/10/82

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
Sand Forest	Sand Prairie	<u>Savanna</u>	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>





Horseshoe Lake Conservation Area  
Site

Transect Set 2

Census Stop # 12

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Observer S. A. Evans

Community Type of Census Stop Floodplain Forest

Date: 5/10/82

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

## Forests

forests  
Upland Forest

Sand Forest

# Floodplain Forest

## Flatwoods

## Prairies

Prairie

## Sand Pra

Gravel H

Hill Pra

Shrub Pr

## Forageland

## COMMUNITY TYPES

## Savanna

Savanna

Sand Sav

Barren

## Successional Field

Wetland

Marsh

Swamp

Bo  
owamp

Fen  
206

Sedae

p

Surface Water

Surface water  
Lake Michigan

Lake Michigan  
Reservoir

Reservoir  
Impoundment

## Impoundment Stream

Stream  
Natural Lake

opened Land



## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Transect Set 2 Census Stop # 13

Page 13 of 55

Observer S. A. Evans

Community Type of Census Stop Floodplain Forest

Date 5/10/82

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
<u>Sand Forest</u>	<u>Sand Prairie</u>	<u>Savanna</u>	<u>Swamp</u>	<u>Reservoir</u>
<u>Floodplain Forest</u>	<u>Gravel Prairie</u>	<u>Savanna</u>	<u>Bog</u>	<u>Impoundment</u>
<u>Flatwoods</u>	<u>Hill Prairie</u>	<u>Sand Savanna</u>	<u>Fen</u>	<u>Stream</u>
	<u>Shrub Prairie</u>	<u>Barren</u>	<u>Sedge Meadow</u>	<u>Natural Lake</u>
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>



## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Observer S. A. Evans

Transect Set 2 Census Stop # 14

Page 14 of 55

Community..Type of Census Stop Cropland

Date: 5/10/82

(not plowed)

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
Sand Forest	Sand Prairie	<u>Savanna</u>	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>





## STRATUM RANKING FORM

ite Horseshoe Lake Conservation Area

Transect Set 2 Census Stop # 15 Page 15 of 55

Community Type of Census Stop

observer S. A. Evans

Cropland Date 5/10/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

Forests		COMMUNITY TYPES		Wetland		Surface Water	
Prairies				Marsh		Lake Michigan	
Upland Forest	Prairie						
Sand Forest	Sand Prairie	Savanna		Swamp		Reservoir	
Floodplain Forest	Gravel Prairie	Savanna		Bog		Impoundment	
Flatwoods	Hill Prairie	Sand Savanna		Fen		Stream	
	Shrub Prairie	Barren		Sedge Meadow		Natural Lake	
Cropland	Forageland	Successional Field				Developed Land	





# Site Horseshoe Lake Conservation Area

Transect Set 2

Census Stop #	16
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Page 16 of 55

Observer S. A. Evans

Community Type of Census Stop Developed Land

Date 5/10/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
Sand Forest	Sand Prairie	<u>Savanna</u>	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>



## Site Horseshoe Lake Conservation Area

Transect Set 3

Census Stop # 17

Page 17 of 55

Observer S. A. Evans

Community Type of Census Stop Floodplain Forest

Date 5/8/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairies</u>	<u>Marsh</u>	<u>Lake Michigan</u>
Sand Forest	Prairie	Swamp	Reservoir
Floodplain Forest	Sand Prairie	Bog	Impoundment
Flatwoods	Gravel Prairie	Pen	Stream
	Hill Prairie	Sedge	Natural Lake
	Shrub Prairie	Meadow	
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>	<u>Developed Land</u>



## STRATUM RANKING FORM

Site Horseshoe Lake Conservation Area

Transect Set 3

Census Stop # 18

Page 18 of 55

Observer S. A. Evans

Community	Type of Census	Stop	Cropland
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
29	29	29	29
30	30	30	30
31	31	31	31
32	32	32	32
33	33	33	33
34	34	34	34
35	35	35	35
36	36	36	36
37	37	37	37
38	38	38	38
39	39	39	39
40	40	40	40
41	41	41	41
42	42	42	42
43	43	43	43
44	44	44	44
45	45	45	45
46	46	46	46
47	47	47	47
48	48	48	48
49	49	49	49
50	50	50	50
51	51	51	51
52	52	52	52
53	53	53	53
54	54	54	54
55	55	55	55
56	56	56	56
57	57	57	57
58	58	58	58
59	59	59	59
60	60	60	60
61	61	61	61
62	62	62	62
63	63	63	63
64	64	64	64
65	65	65	65
66	66	66	66
67	67	67	67
68	68	68	68
69	69	69	69
70	70	70	70
71	71	71	71
72	72	72	72
73	73	73	73
74	74	74	74
75	75	75	75
76	76	76	76
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82	82	82	82
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86	86	86	86
87	87	87	87
88	88	88	88
89	89	89	89
90	90	90	90
91	91	91	91
92	92	92	92
93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

Date 5/8/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
<u>Sand Forest</u>	<u>Sand Prairie</u>	<u>Savanna</u>	<u>Swamp</u>	<u>Reservoir</u>
<u>Floodplain Forest</u>	<u>Gravel Prairie</u>	<u>Savanna</u>	<u>Bog</u>	<u>Impoundment</u>
<u>Flatwoods</u>	<u>Hill Prairie</u>	<u>Sand Savanna</u>	<u>Fen</u>	<u>Stream</u>
	<u>Shrub Prairie</u>	<u>Barren</u>	<u>Sedge Meadow</u>	<u>Natural Lake</u>
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>





## STRATUM RANKING FORM

Site Horseshoe Lake Conservation Area

Observer S. A. Evans

Transect Set 3 Census Stop # 19

Page 19 of 55

Community	Type of Censuses	Stop Cropland (Recently plowed)
...	...	...

Date 5/8/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover.
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

## Forests

Upland Forest

## Sand Forest

## Floodplain Forest

## Flatwoods

## Prairies

Prairie

Sand Prairie

Gravel Prairie

# Hill Prairie

# Shrub Prairie

## Forageland

## COMMUNITY TYPES

## Savanna

## Savanna

## Sand Savanna

# Barren

## Successional Field

## Wetland

Marsh

Swamp

BOG

Fen

Sedg

## Surface Water

Lake Michigan

Reservoir

## Impoundment

Stream

# Natural Lake

Developed Land





Site Horseshoe Lake Conservation Area

Observer S. A. Evans

Transect Set 3 Census Stop # 20

Page 20 of 55

# Community Type of Census Stop Cropland

Date 5/8/82Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

## Forests

Upland Forest  
Sand Forest  
Floodplain For  
Flatwoods

## Prairies

Prairie  
Sand Prairie  
Gravel Prairie  
Hill Prairie

## COMMUNITY TYPES

Savanna  
Savanna

## Wetland

Marsh  
Swamp  
Bog

## Surface Water

Lake Michigan  
Reservoir



## STRATUM RANKING FORM

**Site** Horseshoe Lake Conservation Area

Transect Set 3

Census Stop # 21

Page 21 of 55

Observer S. A. Evans

Community Type of Census Stop Floodplain Forest

Date 5/8/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
<u>Sand Forest</u>	<u>Sand Prairie</u>	<u>Savanna</u>	<u>Swamp</u>	<u>Reservoir</u>
<u>Floodplain Forest</u>	<u>Gravel Prairie</u>	<u>Savanna</u>	<u>Bog</u>	<u>Impoundment</u>
<u>Flatwoods</u>	<u>Hill Prairie</u>	<u>Sand Savanna</u>	<u>Fen</u>	<u>Stream</u>
	<u>Shrub Prairie</u>	<u>Barren</u>	<u>Sedge Meadow</u>	<u>Natural Lake</u>
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>



## STRATUM RANKING FORM

Site Horseshoe Lake Conservation Area

Transect Set 3

Census Stop # 22

Page 22 of 55

Observer S. A. Evans

## Community Type of Census Stop Floodplain Forest

Date 5/12/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

## Forests

## Upland Forest

Sand Forest

## Floodplain Forest

## Flatwoods

## Prairies

Prairie

Sand Prairie

Gravel Prairie

Hill Prairie

Shrub Prairie

## Forageland

## COMMUNITY TYPES

Savanna

Savanna

**Savanna Sand Savanna**

Barren

## Successional Field

Wetland

USJPM

SWAN  
ROD

३०५

ren  
Sed

Id.

## Surface Water

Lake Michigan  
Dacotah

Reservoir  
Immunization

Impoundment

Stream  
Natural Lake

Developed Land





## STRATUM RANKING FORM

# Site Horseshoe Lake Conservation Area

Transect Set 3

Census Stop #	23
1	1
2	2
3	3
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100	100

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Observer S. A. Evans

### Community Type of Census Stop Floodplain Forest

Date 5/12/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

Forests	Prairies	COMMUNITY TYPES	Wetland	Surface Water
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
Cropland	Forageland	Successional Field		Developed Land





# Site Horseshoe Lake Conservation Area

Transect Set 4

Census Stop # 24

Page 24 of 55

Observer S. A. Evans

Community Type of Census Stop Floodplain Forest

Date 5/11/82

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
Sand Forest	Sand Prairie	<u>Savanna</u>	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>



Site Horseshoe Lake Conservation Area

Observer S. A. Evans

Transect Set 4 \_\_\_\_\_  
Census Stop # 25 \_\_\_\_\_

Station	Type of Census Stop	Cropland
1		
2		
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Date 5/8/82

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]



1 Subordinate, only one individual noted

COMMUNITY TYPES		Wetland	Surface Water
Forests	<u>Prairies</u>	<u>Marsh</u>	<u>Lake Michigan</u>
	<u>Prairie</u>	Swamp	Reservoir
	Sand Prairie	Bog	Impoundment
	Gravel Prairie	Fen	Stream
	Hill Prairie	Sand Savanna	Natural Lake
	Shrub Prairie	Barren	
		Successional Field	Developed Land
<u>Cropland</u>	<u>Forageland</u>		





## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Transect Set 4

Census Stop #	27
1	1
2	2
3	3
4	4
5	5
6	6
7	7
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87	87
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91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

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Observer S. A. Evans

Community Type of Census Stop Floodplain Forest

Date 5/26/82

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

## Forests

Upland Forest

Sand Forest

Floodplain Forest

## Flatwoods

## Prairies

Prairie

Sand Pr

Gravel 1

Gravel Hill Pr

## COMMUNITY TYPES

**TECHNICAL**

Savanna

Savanna

le  
Savanna  
Sand S

Wetland

Wetland  
MarshMarsh  
CymruSwan  
Boo

BOB

Confess W-4

Surface Water

Lake Mich  
Dacouned n

Reservoir

Impoundment

## Cropland

## Forageland

## Successional Field

Developed Land





## STRATUM RANKING FORM

**Site Morseshoe Lake Conservation Area**

Transect Set 4

Census Stop #	28
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Observer S. A. Evans

Community Type of Census Stop Floodplain Forest

Date 5/21/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
<u>Sand Forest</u>	<u>Sand Prairie</u>	<u>Savanna</u>	<u>Swamp</u>	<u>Reservoir</u>
<u>Floodplain Forest</u>	<u>Gravel Prairie</u>	<u>Savanna</u>	<u>Bog</u>	<u>Impoundment</u>
<u>Flatwoods</u>	<u>Hill Prairie</u>	<u>Sand Savanna</u>	<u>Fen</u>	<u>Stream</u>
	<u>Shrub Prairie</u>	<u>Barren</u>	<u>Sedge Meadow</u>	<u>Natural Lake</u>
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>



## STRATUM RANKING FORM

Site Horseshoe Lake Conservation Area

Observer S. A. Evans

Transect Set 4 Census Stop # 29

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Community Type of Census Stop Floodplain Forest  
(Streamside)

Date 5/11/82

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

Forests  
Upland Forest  
Sand Forest  
Floodplain Forest  
Flatwoods

Prairies  
Prairie  
Sand Pra  
Gravel P  
Hill Pra  
Shrub Pra  
Forageland

UNITY TYPES

Savanna  
Savanna  
Sand Savanna  
Barren  
Successional

Wetland  
Marsh  
Swamp  
Bog  
Fen  
Sedge

Surface Water  
Lake Michigan  
Reservoir  
Impoundment  
Stream  
Natural Lake  
Open Land



## Site Horseshoe Lake Conservation Area

Transect Set 4

Census Stop # 30

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Observer S. A. Evans

Community Type of Census Stop Forageland

Date 5/10 82

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
	Forageland	<u>Successional Field</u>		Developed Land
<u>Cropland</u>				





## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Transect Set 5

Census Stop # 31

Page 31 of 55

Observer S. A. Evans

## Community Type of Census Stop Floodplain Forest

Date 5/13/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairies</u>	<u>Marsh</u>	<u>Lake Michigan</u>
<u>Sand Forest</u>	<u>Prairie</u>	<u>Swamp</u>	<u>Reservoir</u>
<u>Floodplain Forest</u>	<u>Sand Prairie</u>	<u>Bog</u>	<u>Impoundment</u>
<u>Flatwoods</u>	<u>Gravel Prairie</u>	<u>Fen</u>	<u>Stream</u>
	<u>Hill Prairie</u>	<u>Sedge Meadow</u>	<u>Natural Lake</u>
	<u>Shrub Prairie</u>		
		<u>Successional Field</u>	<u>Developed Land</u>
<u>Cropland</u>	<u>Forageland</u>		









## STRATUM RANKING FORM

Site Horseshoe Lake Conservation Area

Transect Set 5 Census Stop # 33

Page 33 of 55

Observer S. A. Evans

Community Type of Census Stop Floodplain Forest

Date 5/14/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairies</u>	<u>Marsh</u>	<u>Lake Michigan</u>
<u>Sand Forest</u>	<u>Prairie</u>	<u>Swamp</u>	<u>Reservoir</u>
<u>Floodplain Forest</u>	<u>Sand Prairie</u>	<u>Bog</u>	<u>Impoundment</u>
<u>Flatwoods</u>	<u>Gravel Prairie</u>	<u>Fen</u>	<u>Stream</u>
	<u>Hill Prairie</u>	<u>Sedge</u>	<u>Natural Lake</u>
	<u>Shrub Prairie</u>	<u>Meadow</u>	
	<u>Forageland</u>	<u>Successional Field</u>	<u>Developed Land</u>
<u>Cropland</u>			



## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Observer S. A. Evans

Transect Set . 5

Census Stop # 34

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Community Type of Census Stop Floodplain Forest

Date 5/14/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

## Forests

Upland Forest  
Sand Forest  
Floodplain For  
Flatwoods

## Cropland

## Prairies

Prairie  
Sand Prairie  
Gravel Prairie  
Hill Prairie  
Shrub Prairie

## COMMUNITY TYPES

Savanna  
Savanna  
Sand Savanna  
Barren

Wetland  
Marsh

Swamp  
Bog  
Fen  
Sedge Meadow

## Surface Water

Lake Michigan  
Reservoir  
Impoundment  
Stream  
Natural Lake  
ed Land

Developed Land





## STRATUM RANKING FORM

Site Horseshoe Lake Conservation Area

Transect Set . 5

Census Stop # 35

Page 35 of 55

Observer S. A. Evans

Community Type of Census Stop Floodplain Forest

Date 5/17/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
	Forageland	<u>Successional Field</u>		Developed Land
<u>Cropland</u>				





## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Observer S. A. Evans

Transect Set 5 Census Stop # 36

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Community Type of Census Stop Floodplain Forest

Date 5/14/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

Forests		COMMUNITY TYPES		Wetland		Surface Water	
Upland Forest	Prairie			Marsh		Lake Michigan	
Sand Forest	Sand Prairie		Savanna	Swamp		Reservoir	
Floodplain Forest	Gravel Prairie		Savanna	Bog		Impoundment	
Flatwoods	Hill Prairie		Sand Savanna	Fen		Stream	
	Shrub Prairie		Barren	Sedge Meadow		Natural Lake	
Cropland	Forageland		Successional Field			Developed Land	



## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Transect Set 5 Census Stop # 37

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Observer S. A. Evans

Community Type of Census Stop Floodplain Forest

Date 5/17/82

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
<u>Sand Forest</u>	<u>Sand Prairie</u>	<u>Savanna</u>	<u>Swamp</u>	<u>Reservoir</u>
<u>Floodplain Forest</u>	<u>Gravel Prairie</u>	<u>Savanna</u>	<u>Bog</u>	<u>Impoundment</u>
<u>Flatwoods</u>	<u>Hill Prairie</u>	<u>Sand Savanna</u>	<u>Fen</u>	<u>Stream</u>
	<u>Shrub Prairie</u>	<u>Barren</u>	<u>Sedge Meadow</u>	<u>Natural Lake</u>
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>



## STRATUM RANKING FORM

# Site Horseshoe Lake Conservation Area

Observer S. A. Evans

Transect Set 6 Census Stop # 38

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[illegible]

Date 5/16/82

(Residential)

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
<u>Sand Forest</u>	<u>Sand Prairie</u>	<u>Savanna</u>	<u>Swamp</u>	<u>Reservoir</u>
<u>Floodplain Forest</u>	<u>Gravel Prairie</u>	<u>Savanna</u>	<u>Bog</u>	<u>Impoundment</u>
<u>Flatwoods</u>	<u>Hill Prairie</u>	<u>Sand Savanna</u>	<u>Fen</u>	<u>Stream</u>
	<u>Shrub Prairie</u>	<u>Barren</u>	<u>Sedge Meadow</u>	<u>Natural Lake</u>
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>





## STRATUM RANKING FORM

# Site Horseshoe Lake Conservation Area

Transect Set 6 Census Stop # 39

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Observer S. A. Evans

Community Type of Census Stop Floodplain Forest

Date 5/16/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
<u>Sand Forest</u>	<u>Sand Prairie</u>	<u>Savanna</u>	<u>Swamp</u>	<u>Reservoir</u>
<u>Floodplain Forest</u>	<u>Gravel Prairie</u>	<u>Savanna</u>	<u>Bog</u>	<u>Impoundment</u>
<u>Flatwoods</u>	<u>Hill Prairie</u>	<u>Sand Savanna</u>	<u>Fen</u>	<u>Stream</u>
	<u>Shrub Prairie</u>	<u>Barren</u>	<u>Sedge Meadow</u>	<u>Natural Lake</u>
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>





## STRATUM RANKING FORM

# Site Horseshoe Lake Conservation Area

Transect Set 6 Census Stop # 40

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Observer S. A. Evans

## Community Type of Census Stop Floodplain Forest

Date 5/16/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

## Forests

rests  
Upland ForestPrairies  
Prairie

## COMMUNITY TYPES

Wetland

Surface Water  
Lake Michigan

1 Subordinate, only one individual noted

Sand Prairie  
Gravel Prairie  
Hill Prairie  
Shrub Prairie

Savanna  
Savanna  
Sand Savanna  
Barren

Swamp  
Bog  
Fen  
Sedg

low Natural Lake  
Developed Land

### Cropland

## Forageland

## Successional Field

Developed Land



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Date 5/16/82

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
<u>Upland Forest</u>	<u>Prairie</u>		<u>Marsh</u>	<u>Lake Michigan</u>
<u>Sand Forest</u>	<u>Sand Prairie</u>	<u>Savanna</u>	<u>Swamp</u>	<u>Reservoir</u>
<u>Floodplain Forest</u>	<u>Gravel Prairie</u>	<u>Savanna</u>	<u>Bog</u>	<u>Impoundment</u>
<u>Flatwoods</u>	<u>Hill Prairie</u>	<u>Sand Savanna</u>	<u>Fen</u>	<u>Stream</u>
	<u>Shrub Prairie</u>	<u>Barren</u>	<u>Sedge Meadow</u>	<u>Natural Lake</u>
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>



## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Transect Set . 6

Census Stop // 42

Page 42 of 55

Observer S. A. Evans

Community	Type of Census	Stop	Floodplain Forest

Date 5/16/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
Cropland	Forageland	Successional Field		<u>Developed Land</u>





## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Observer S. A. Evans

Transect Set 6 Census Stop # 43

Page 43 of 55

Community Type of Census Stop Floodplain Forest Date 5/16/82

Date 5/16/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

Forests	Prairies	COMMUNITY TYPES	Wetland	Surface Water
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
Cropland	Forageland	Successional Field		Developed Land





## STRATUM RANKING FORM

# Site Horseshoe Lake Conservation Area

Observer S. A. Evans

Transect Set	Census Stop #
6	44

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Community Type of Census Stop Floodplain Forest

Date 5/16/82

(Mesic)

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
Cropland	Forageland	Successional Field		Developed Land



## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Observer S. A. Evans

Transect Set 6 Census Stop # 45

Community Type of Census Stop Forageland

Page 45 of 55

Date 5/16/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>		<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
Upland Forest	Prairies		Marsh	Lake Michigan
Sand Forest	<u>Prairie</u>	Savanna	Swamp	Reservoir
Floodplain Forest	Sand Prairie	<u>Savanna</u>	Bog	Impoundment
Flatwoods	Gravel Prairie	Sand Savanna	Fen	Stream
	Hill Prairie	Barren	Sedge Meadow	Natural Lake
	Shrub Prairie			
	Forageland	<u>Successional Field</u>		<u>Developed Land</u>
<u>Cropland</u>				



## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Observer S. A. Evans

Transect Set	Q7	Census Stop #
		46

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Community Type of Census Stop Developed Land

Date 5/21/82

(Picnic Area adjacent to swamp)

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

Forests		COMMUNITY TYPES		Wetland		Surface Water	
Upland Forest	Prairie			Marsh		Lake Michigan	
Sand Forest	Sand Prairie		Savanna	Swamp		Reservoir	
Floodplain Forest	Gravel Prairie		Savanna	Bog		Impoundment	
Flatwoods	Hill Prairie		Sand Savanna	Fen		Stream	
	Shrub Prairie		Barren	Sedge Meadow		Natural Lake	
Cropland	Forageland		Successional Field			Developed Land	





## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Transect Set Q7 Census Stop # 47

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Observer S. A. Evans

Community Type of Census Stop Impoundment

Date 5/29/82

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
Cropland	Forageland	Successional Field		Developed Land



## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Transect Set Q7 Census Stop # 48

Page 48 of 55Observer S. A. Evans

Community Type of Census Stop Impoundment/Swamp

Date 5/29/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>		<u>COMMUNITY TYPES</u>		<u>Wetland</u>	<u>Surface Water</u>
Upland Forest	Prairies			Marsh	Lake Michigan
Sand Forest	Prairie			Swamp	Reservoir
Floodplain Forest	Sand Prairie		Savanna	Bog	Impoundment
Flatwoods	Gravel Prairie		Savanna	Fen	Stream
	Hill Prairie		Sand Savanna	Sedge Meadow	Natural Lake
	Shrub Prairie		Barren		
	Forageland				
Cropland			<u>Successional Field</u>		Developed Land



## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Transect Set Q7 Census Stop # 49

Page 49 of 55

Observer S. A. Evans

### Community Type of Census Stop Developed Land

Date 5/29/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
	Forageland	Successional Field		Developed Land
<u>Cropland</u>				





## STRATUM RANKING FORM

# Site Horseshoe Lake Conservation Area

Transect Set Q7 Census Stop # 50

Page 50 of 55

Observer S. A. Evans

Community Type of Census Stop Swamp

Date 5/29/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>		<u>Prairies</u>	<u>COMMUNITY TYPES</u>		<u>Wetland</u>		<u>Surface Water</u>
Upland Forest	Prairie			Savanna	Marsh		Lake Michigan
Sand Forest	Sand Prairie			Savanna	Swamp		Reservoir
Floodplain Forest	Gravel Prairie			Savanna	Bog		Impoundment
Flatwoods	Hill Prairie			Sand Savanna	Fen		Stream
	Shrub Prairie			Barren	Sedge Meadow		Natural Lake
Cropland	<u>Forageland</u>			Successional Field			Developed Land





## Site Horseshoe Lake Conservation Area

Transect Set	Q7	Census Stop #	51
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Page 51 of 55

Observer S. A. Evans

Community Type of Census Stop Surface Water (Pond) Date 5/29/82

Date 5/29/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
<u>Cropland</u>	<u>Forageland</u>	<u>Successional Field</u>		<u>Developed Land</u>







## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Transect Set Q7 Census Stop # 53

Page 53 of 55

Observer S. A. Evans

Community Type of Census Stop Swamp

Date 5/29/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
Cropland	Forageland	Successional Field		Developed Land





## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Transect Set Q7 Census Stop # 54

Page 54 of 55

Observer S. A. Evans

Community Type of Census Stop Swamp

Date 5/29/82

## Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
Cropland	Forageland	Successional Field		Developed Land



## STRATUM RANKING FORM

## Site Horseshoe Lake Conservation Area

Transect Set Q7 Census Stop # 55

Page 55 of 55

Observer S. A. Evans

Community Type of Census Stop Swamp

Date 5/29/82

### Stratum Ranking

- 9 Dominant in essentially pure stand, no other species exceed SR2
- 8 Dominant, next lower species cannot exceed SR6
- 7 Codominants, two or possibly three species sharing dominance
- 6 Codominants, several species sharing dominance
- 5 Intermediate, common species with moderate cover
- 4 Intermediate, common species with low to moderate cover
- 3 Intermediate, several plants with minimal cover
- 2 Subordinate, two to several plants of inconsequential cover
- 1 Subordinate, only one individual noted

[illegible]

<u>Forests</u>	<u>Prairies</u>	<u>COMMUNITY TYPES</u>	<u>Wetland</u>	<u>Surface Water</u>
Upland Forest	Prairie		Marsh	Lake Michigan
Sand Forest	Sand Prairie	Savanna	Swamp	Reservoir
Floodplain Forest	Gravel Prairie	Savanna	Bog	Impoundment
Flatwoods	Hill Prairie	Sand Savanna	Fen	Stream
	Shrub Prairie	Barren	Sedge Meadow	Natural Lake
Cropland	Forageland	Successional Field		Developed Land



APPENDIX C

Daily Data Sheets



Note: The left space in each column is for use in recording birds detected during the transect between points; the right space is for use in recording birds detected during the 10-minute stop. Use appropriate spaces on the reverse side for recording birds flying over or through the study area which do not stop in the study area.





















OBSERVER S. Eason

TIME 5:35

TEMP. 67°F

WIND CODE 3

SKY 5

Starting: 5:35

Ending: 6:00

Print the correct STOP NUMBER in the designated space above each column.

SPECIES	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Belted Kingfisher	1		1	2	1															
Cardinal	2		1	2	3	2	2	4	2	6	1									
Red-bellied Woodpecker	7	14	3	4	4	3														
Cowbird	2	6	3	3	4															
Grackles	1		1																	
Mockers	5	3	2	1	2	3	2													
Worm-eating Warbler	1		2	1	1															
Parula	1		2	1	3															
Dove	1			2																
Downy Woodpecker	1																			
Yellowthroat		1				3														
Chickadee		1	1		1															
Robin		1			2															
Hummer		2	4																	
Flicker			2	8	2	3	1													
Titmouse			1	1																
House Sparrow			5																	
Chickadee			3		5															
Yellow Warbler			3			1	6	2	3	11										
Parula				1	1															
Redstart			1	1	3															
Parula						1														
Mocker			2																	
Red Wood			1		1	1														
Grackle					2															
Wood Thrush						3														
Flower						1														
Red-shouldered						2														
Yellowthroat						2														
Yellowthroat						2														
Yellowthroat						2														
Yellowthroat						1														
Yellowthroat						1														

Note: The left space in each column is for use in recording birds detected during the transect between points; the right space is for use in recording birds detected during the 10-minute stop. Use appropriate spaces on the reverse side for recording birds flying over or through the study area which do not stop in the study area.









OBSERVER

Quint

Print the correct STOP NUMBER in the designated space above each column.

TRANSECT SET F: 1 STOP NUMBERS: 1 to 8

TIME	TEMP.	WIND CODE	SKY
0000	10	0	0
0100	10	0	0
0200	10	0	0
0300	10	0	0
0400	10	0	0
0500	10	0	0
0600	10	0	0
0700	10	0	0
0800	10	0	0
0900	10	0	0
1000	10	0	0
1100	10	0	0
1200	10	0	0
1300	10	0	0
1400	10	0	0
1500	10	0	0
1600	10	0	0
1700	10	0	0
1800	10	0	0
1900	10	0	0
2000	10	0	0
2100	10	0	0
2200	10	0	0
2300	10	0	0
2400	10	0	0

TEMP.

WIND CODE:

# SKY

**Starting:**

## Ending:

DATE: 6/2/83

SPECIES	#8	#7	#6	#5	#4	#3	#2	#1	TOTAL
Chickadee	1	1	1	1					4
Titmouse	3	2	1	1					7
Chipping	3	1	1	1					6
Black-throated	1	3	1						5
Cardinal	3	5	2	5					15
Warbler	1	3	2	2					8
Robin	2	2	4	4					12
Mockingbird	2	1	2	1					6
Killdeer	1		2	1					4
Cowbird	2		3	1					6
Field sparrow	4		1	2					7
Yellowthroat	1	2	2	3					8
(Nuthatch)	1	2	1	1					5
Chickadee	3	5	2	3					13
Red-wings	2	3	1	1					7
Red-wings	1	3	2	1					7
Chickadee	1	1	1	1					4
Red-wings	1	2	1	1					5
Yellowthroat	1	2	1	1					5
White-eyed Vireo	1	1	1	1					4
Grackles	1	1	1	1					4
Starling	1	1	1	1					4
Yellowthroat	1	1	1	1					4
White-eyed Vireo	1	1	1	1					4
Grackles	1	1	1	1					4
Starling	1	1	1	1					4
Yellowthroat	1	1	1	1					4
White-eyed Vireo	1	1	1	1					4
Grackles	1	1	1	1					4
Starling	1	1	1	1					4
Yellowthroat	1	1	1	1					4
White-eyed Vireo	1	1	1	1					4
Grackles	1	1	1	1					4
Starling	1	1	1	1					4
Yellowthroat	1	1	1	1					4
White-eyed Vireo	1	1	1	1					4
Grackles	1	1	1	1					4
Starling	1	1	1	1					4
Yellowthroat	1	1	1	1					4
White-eyed Vireo	1	1	1	1					4
Grackles	1	1	1	1					4
Starling	1	1	1	1					4
Yellowthroat	1	1	1	1					4
White-eyed Vireo	1	1	1	1					4
Grackles	1	1	1	1					4
Starling	1	1	1	1					4
Yellowthroat	1	1	1	1					4
White-eyed Vireo	1	1	1	1					4
Grackles	1	1	1	1					4
Starling	1	1	1	1					4
Yellowthroat	1	1	1	1					4
White-eyed Vireo	1	1	1	1					4
Grackles	1	1	1	1					4
Starling	1	1	1	1					4
Yellowthroat	1	1	1	1					4
White-eyed Vireo	1	1	1	1					4
Grackles	1	1	1	1					4
Starling	1	1	1	1					4
Yellowthroat	1	1	1	1					4
White-eyed Vireo	1	1	1	1					4
Grackles	1	1	1	1					4
Starling	1	1	1	1					4
Yellowthroat	1	1	1	1					4
White-eyed Vireo	1	1	1	1					4
Grackles	1	1	1	1					4
Starling	1	1	1	1					4
Yellowthroat	1	1	1	1					4
White-eyed Vireo	1	1	1	1					4

Note: The left space in each column is for use in recording birds detected during the transect between points; the right space is for use in recording birds detected during the 10-minute stop. Use appropriate spaces on the reverse side for recording birds flying over or through the study area which do not stop in the study area.









VER  
S. GARDNER

VER - S. Garrison

TIME	TEMP.	WIND CODE	SKY
Starting: <u>6:00</u>	<u>64° F</u>	<u>1</u>	<u>0</u>
Ending: <u>9:33</u>	<u>77° F</u>	<u>2</u>	<u>0</u>

(for the site)

DATE: 5/19/82

SPECIES	#9	#10	#11	#12	#13	#14	#15	#16	#17	#18	#19
Cowbird			6	3	2			1			
Robin	4						2	1			4
Red-shouldered Hawk	3							2			4
Red-bellied Woodpecker	2	1	1					1			4
Cardinal	2	1	1		2	2	1	1			7
Bobwhite	1				1	1	2	2			17
Red-bellied Woodpecker	1	2	1					1			2
Carolina Chickadee	1	1	4	1		1					6
Downy Woodpecker	1			1							12
Common Crow	2	4	1		1						2
Starling				2	2		1				8
Red-winged Blackbird		2	12			7		1			5
Bobwhite		3									22
Kingbird		3	1	1	2						2
Killdeer		2				2					2
Si. Oriole		1									2
Field Sparrow		2	1	2	3	3	1				16
Indigo Bunting		3	3	2	6	2	2	1			24
Titmouse		1			1	1		1			5
Mockingbird		1									1
Blue Jay		2	2								1
E. Wood Pewee		1	1					1			1
House Wren		1									1
Yellow-throated Vireo		1	1	1		1		1			1
Yellow-shafted Flicker		2						1			1
Grackles		1	3					2			1
Acadian Fl.catcher		1		1							1
Carolina Chickadee		1	2			1	1				1
Yellowthroat		2	2	1	2	3	4	2			6
Hummingbird			2	1							20
Veery				1							3
Yellow-billed Cuckoo				1	1		1				1
Yellow-billed Cuckoo								2			1

Note: The left space in each column is for use in recording birds detected during the transect between points; the right space is for use in recording birds detected during the 10-minute stop. Use appropriate spaces on the reverse side for recording birds flying over or through the study area which do not stop in the study area.



[illegible][illegible]





Print the correct STOP NUMBER in the designated space above each column.

SPECIES	#9	#10	#11	#12	#13	#14	#15	#16	#17
Peewee	1	2	2					1	
Western Gull	2							3	
Phalarope	2							3	
Acadiah	1	1	1						
Chaparral	1								
Cardinal	2	1	3	4	4	8	2	2	2
Yellow Warbler	2	1							
Yellowthroat	1	2	1	3	1	2	2	1	
Grackle	2	2	2				9		
BBAB	1	2	2	2	1	3	2	7	
BB Wood	1								
Chickadee	1	2	5	3	3	2	2	1	
C. Crow	1	6	2	2	1	2		3	
Dusky Wood	2	1	3			1		2	
Cuckoo	2	1	2	1	2	3	1		
Robin	2								
Grackles	1		3	1	1			1	
Cowbird		10	5	3	1			1	4
Killdeer	1	1		2			1	2	1
Wood Duck	3								
RS Hawk	1								
E. Kingbird	1								
Chimney	4		3	4	3	2	5	2	3
Tennessee	1		1	1	2	3			
House Wren	1	1			1				
Mallard	1								
Wood Duck	1								
CH Duck	1								
Flicker	1								
Field Sp	3		2	3	1	1	4	2	1
Blue Jay	1	2	1	1	3	2			
Red Wing		1	1				1		1
Palm Warbler		2							
Wood Thrush	1	1		1	2			1	

Note: The left space in each column is for use in recording birds detected during the transect between points; the right space is for use in recording birds detected during the 10-minute stop. Use appropriate spaces on the reverse side for recording birds flying over or through the study area which do not stop in the study area.









SITE

6677

OBSERVER

G. W. S.

TRANSECT SET 2 STOP NUMBERS: 9 to 16.

Page

1

(for this date)

DATE: 6/13/82

TIME TEMP. WIND CODE SKY

Starting: 5:30 64 °F 1 0Ending: 8:40 70 °F 1 0

Print the correct STOP NUMBER in the designated space above each column.

SPECIES	#16	#15	#14	#13	#12	#11	#10	#9	#8	#7	#6	#5	#4	#3	#2	#1
Robin	1															
Winter Wren	2															
Titmouse	1	1	2													
C. Chickadee	1	2	2	4	5	1	3	2	2	5						
Robin	3	3	1	4	4	3	1	2	2	2						
Downy woodpecker	1															
Bewick's	1	2	3	2	4	1	4	2	2	1						
Coal tit	2	1	4	2	4	3	3	2	2	1						
White-eyed vireo	1	3	2													
Nuthatch	2	2	2													
R. Wren	2															
Acad. Flycatcher	1															
Grackles	1	3														
Com. Crow	2	2														
Grackles	1															
Cardinal	1	1	2	2	2	2	1	2	2	3						
Killdeer	1	1														
Wood thrush	2	2														
Redstart	1	3	2													
Field sp.	1	1	2	1	2	1	2									
Robin	1	1	2													
Yellow throat	1	1	3	1												
Red-eyed vireo	1	1	1													
Chickadee	1	1	1													
Robin	2	2														
Dove	1	1														
Cuckoo	1	1	1	1	1	1	1	1	1	1						
RS Hawk	1	1														
Junco	1	1	2	1	1	1	1	1	1	1						
Flicker	1	1	1													
Blue jay	1	1	1													
Mocker	1	1	1													
Titmouse	1	1	1													
Robin	1	1	1													

Note: The left space in each column is for use in recording birds detected during the transect between points; the right space is for use in recording birds detected during the 10-minute stop. Use appropriate spaces on the reverse side for recording birds flying over or through the study area, which do not stop in the study area.





[illegible][illegible]



OBSERVER

Evans

Print the correct STOP NUMBER in the designated space above each column.

Starting:  
Ending:

TIME	TEMP.	WIND CODE	SKY
5:45	62°F	1	0
7:35	77°F	2	0

DATE: 6/24/82

## SPECIES

[illegible]

Note: The left space in each column is for use in recording birds detected during the transect between points; the right space is for use in recording birds detected during the 10-minute stop. Use appropriate spaces on the reverse side for recording birds flying over or through the study area which do not stop in the study area.























OBSERVER

Print the correct STOP NUMBER in the designated space above each column.

TIME	TEMP.	WIND CODE	SKY
Starting: 5:40	58° F	0	0
Ending: 10:00	69° F	1	0

DATE: 6/2/82

[illegible]

Note: The left space in each column is for use in recording birds detected during the transect between points; the right space is for use in recording birds detected during the 10-minute stop. Use appropriate spaces on the reverse side for recording birds flying over or through the study area which do not stop in the study area.









OBSERVER

50003

Print the correct STOP NUMBER in the designated space above each column.

## SPECIES

22

18

679

20

77

3



4

20

1

10

Acadian Flycatcher	
Common Crow	
Field Sparrow	
Cardinal	
Brewing	
Cuckoo	
Melospiza	
Titmouse	
Downy Woodpecker	
Parula Warbler	
Thicket Warbler	
Prothonotary Warbler	
Parula - Indigo Bunting	
RV Warbler	
RV Warbler	
Connecticut Warbler	
White-crowned Sparrow	
Chimney Swift	
Nighthawk	
Red-eyed Vireo	
Pied-billed Grebe	
Pintail	
Chickadee	
Chat	
RWB	
Indigo Bunting	
Cuckoo	
G.C. Gnatcatcher	
Pileated Woodpecker	
Killdeer	
Bobwhite	
RS Hawk	
Wood Thrush	
Great Blue Heron	
Green Heron	

Note: The left space in each column is for use in recording birds detected during the transect between points; the right space is for use in recording birds detected during the 10-minute stop. Use appropriate spaces on the reverse side for recording birds flying over or through the study area which do not stop in the study area.



## SPECIES

#17

#18

#19

#20

#21

#22

#23

#

#

#

#

#

Little blue Heron

Wading

Wading

Yellow-crowned night heron (Common)

R. B. Wood

Whistling Vireo

Cerulean Warbler

Mountain Warbler

Cerulean Warbler

Blue Jay

Scrub Wren

Hairy Woodpecker

Hairy Woodpecker

Cerulean Warbler

8

4

2

1

1

2

1

1

1

1

1

1

1

1

1

1

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1

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1

1

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1

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1

1

1

Utilize this portion of the data sheet to record those species observed flying over or through the study area, but not stopping in the study area or those species not a typical part of the habitat type being censused.





OBSERVER

Exams

Print the correct STOP NUMBER in the designated space above each column.

## SPECIES

Prothonotary	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Note: The left space in each column is for use in recording birds detected during the transect between points; the right space is for use in recording birds detected during the 10-minute stop. Use appropriate spaces on the reverse side for recording birds flying over or through the study area which do not stop in the study area.



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TIME 5:40 TEMP. 67°F WIND CODE 1 SKY 0  
 Ending: 9:45 74°F 1 2

OBSERVER G. Arnold  
 Print the correct STOP NUMBER in the designated space above each column.

SPECIES	#24	#25	#26	#27	#28	#29	#30	#31	#32	#33	#34	#35	#36	#37	#38	#39	#40	#41	#42	#43	#44
White-eyed Vireo	1																				
Acad. Chickadee	2	1	4	3	1	2	1	2	1	2	1	3	2	1	1	2	1	1	1	1	5
Flicker	1																				20
Robin	1																				1
Gray Catbird	3	2	2	1	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	18
Chickadee	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6
Chickadee	2	1	2	2	1	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	14
Common Crow	2	2																			10
Yellowthroat	1	2																			11
Parula	3	2	3	4	1	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	25
Downy Woodpecker	1	1	3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	14
Red-eyed Vireo	1	1																			5
Starling	2																				2
Red BP	1	1																			3
Brewer's	1	3	2	3	2	2	3	1	3	1	4	3	1	1	1	1	1	1	1	1	22
Titmouse	1	3	2	4	1	4	3	2	2	2	3	3	1	1	1	1	1	1	1	1	20
Colaptes	1	1																			1
Cardinal	1	1																			5
Field Sparrow	1	1	1	1		2															10
Thrasher	1																				4
Mourning Dove	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	10
Pewee	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	19
Cuckoo	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	6
RB Wood	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
KE Wood	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
Gray Warbler	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
Yellowthroat	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
White-eyed Vireo	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Hummer	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Palmer Warbler	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Black-throated Blue	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
Parula	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Blue Jay	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Myrtle Warbler	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Note: The left space in each column is for use in recording birds detected during the transect between points; the right space is for use in recording birds detected during the 10-minute stop. Use appropriate spaces on the reverse side for recording birds flying over or through the study area which do not stop in the study area.









DATE: 6/6/82  
OBSERVER Evans  
Print the correct STOP NUMBER in the designated space above each column.

Starting: 5:40 TEMP. 60°F WIND CODE 0 SKY 4  
Ending: 9:45 72°F 1 0

SPECIES	#20	#29	#28	#27	#26	#25	#24	#	#	#	#	#
Flicker SP	1	2	1			1	1	3				
Yellowthroat	1	3		1								
Bluebird	2	2	2		4			2	2	4		
Crows	1	1	3	1	1	1						
OH Wood	1		3	1	1							
Starling	2	1	3	1	1	1						
Downy Wood	1	1	3	2	1	2						
Tree Sparrow	1	2	3	2	1							
Finch	1	2	2		1							
Franklin's Gull	2		1									
Nuthatch	1		5	2	4							
Grackle	1		2	2				3				
Blue Jay	1				2	1	1	1				
Galapagos		2										
C. Crow		5			1	4	2					
Dove		4	1					1				
Cardinal		4	4	3	8	2		2	3			
WE Wren		1	1	1				1				
RS Thrush		1	1			2						
House Sp.		2										
Chipping sp.		2			2							
Prothonotary		1	1									
Chickadee		1	1									
Flicker		8	3	6	2	3	5	1	1	3	1	3
Bluebird		1	1			1						
Yellowthroat		1	1									
RD Wren		2	1	1				1				
RWB		2	1	1						4		
Kentucky W.		1	1	1	1	1	1					
Scrub W.		1	1									
Grassquit		1	1	6	2	3	1	1	1			
Starling			1									
Blue Jay			1									
Yellowthroat			1									
Wood Thrush			1	1	1	1	1	1	1			

Note: The left space in each column is for use in recording birds detected during the transect between points; the right space is for use in recording birds detected during the 10-minute stop. Use appropriate spaces on the reverse side for recording birds flying over or through the study area which do not stop in the study area.





SPECIES	#30	#29	#28	#27	#26	#25	#24	#	#	#
Goldeneye			1	2						
Common Loon			3	2						
Wedge-tailed Duck			1	2						
Hairy			2	1						
Newark										
Goosander			5				3			
Common Goldeneye				2						
Black Duck			1	1						
Red-eyed Vireo					2		1			
East					2					
W. Towhee					2					
Scrub Jay					1					
Redstart						2				
Mockingbird							1			

Utilize this portion of the data sheet to record those species observed flying over or through the study area, but not stopping in the study area or those species not a typical part of the habitat type being censused.









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OBSERVER EWINGTRANSECT SET 7 STOP NUMBERS: 24 to 30.Page 1 (for this date)DATE: 6/24/82TIME  
Starting: 5:35  
Ending: 10:15  
TEMP 65 °F  
WIND CODE 2  
SKY 8

Print the correct STOP NUMBER in the designated space above each column.

SPECIES	#30	#29	#28	#27	#26	#25	#24	#23	#22	#21	#20	#19	#18	#17	#16	#15	#14	#13	#12	#11	#10	#9	#8	#7	#6	#5	#4	#3	#2	#1
Bunting	2	4	2	2	3	1	2	1	2	1	3	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
RS Hawk	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Baldpate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tanager	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chickadee	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cardinal	1	3	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Yellowthroat	1	2	2	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Golden-crowned	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Parula	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Field sparrow	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Titmouse	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Junco sp.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cuckoo	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chickadee	5	2	3	3	5	1	3	4	3	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Blue Jay	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Wilson Towhee	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Red Wing	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nuthatch	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Grackles	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Robin	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
White-eyed Vireo	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Acorn Woodpecker	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Nighthawk	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Broad-winged Hawk	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Parula	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Flicker	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Parula	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
RT Wood	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yellow-throated Vireo	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bluebird	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Grackle	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Downy Woodpecker	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Blue Jay	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Red-eyed Vireo	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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## SPECIES

RC Wood  
Cerulean Warbler  
GC Flycatcher  
Parula Warbler  
Pileated Wood

#30

#29

#28

#27

#26

#25

#24

#23

#22

#21

#20

#19

Utilize this portion of the data sheet to record those species observed flying over or through the study area, but not stopping in the study area or those species not a typical part of the habitat type being censused.











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Print the correct STOP NUMBER in the designated space above each column.

SPECIES	#31	#32	#33	#34	#35	#36	#37	#	#	#	#	#
Chickadee	1	4	3	1	2	4	3	2	3	2	3	1
Acadian Chantrelle	2	2	1	4	2	2	2	2	2	1	1	1
Cardinal	2	2	3	1	1	1	1	2	2	3	2	
RT Hawk	1											
crow	3	1						2	4	2		
RB wood	2	1						1	1	1		
Cuckoo	1	2						2	1	1		
Towhees	1	1	2	1	2	1	1	2	1	1	2	
Flicker	1	1	2	1	1	1	1	2	1	1		
Pewee	1	1	2	1	1	1	1	1	1	1		
AT wood	1	1						1				
Ky warbler	1	1						2				
Blue-winged green	2	1						1	2	1		
Grackles	1	1						3	1	1		
Yellowthroat	1	1						1	1			
Wood Thrush	1	1						1				
Thru wood	2	1						1				
Nuthatch	1	1						1				
Red-eyed Vireo	1	1						1				
Blue jay	2	1						1	1			
Bluebird	1	1						1	1	2		
Yellowthroat	1	1						1	1	2	2	
Heron	1	1						1	1	2	2	
Parula	1	1						1				
Towhee	1	1						1				
Chat	1	1						1				

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[illegible][illegible]





OBSERVER

CAPTAINS

Print the correct STOP NUMBER in the designated space above each column.

TRANSECT SET 2 FROM NUMBERS: 21 TO 21

TIME 5:25 TEMP. 67°F WIND CODE 1 SKY 0

Starting: 5:25 Ending: 10:10 74°F 2 0

Page 1 (for this date)DATE: 6/21/82

SPECIES	#37	#36	#35	#34	#33	#32	#31	#30	#29	#28	#27	#26	#25	#24	#23	#22	#21	#20	#19	#18	#17	#16	#15	#14	#13	#12	#11	#10	#9	#8	#7	#6	#5	#4	#3	#2	#1	
Wood Thrush	2	3				1	1																															
Wren Oriole	2		2	1																																		
Gnatcatcher	2	1																																				
Chickadee	3	4	3	3	5	4																																
Bunting	2																																					
Ry. Warbler	1	1	1			1	1																															
Chickadee	1	1	1																																			
Barred Dove	1																																					
Cardinal	1	1	2	1	3	1	1																															
Acad. Flycatcher	1	4	2	3	2	3	2																															
Yellow Warbler	1	3	1	2																																		
White-eyed Vireo	1	1																																				
Nuthatch	1	1	1	1	3	1	1																															
Towhee	2	2																																				
Heron Wood	1	1																																				
Parula	1	1	1	1	1	2	2																															
Blue Jay	1	2	1	2	2	3	1																															
Downy Woodpecker	1	2	1	2	2	3	1																															
Red-eyed Vireo	1	1	1	1	1	1																																
Blue Woodpecker	1	2	2	1	1	1	4																															
Chickadee	1	1	1	1	1	1	1																															
Titmouse	1	1	1	1	1	1	1																															
Hummingbird	1	1	1	1	1	1	1																															
Rob. Hawk	1	1	1	1	1	1	1																															
Yellow-bellied Vireo	1	1	1	1	1	1	1																															
ORV. Wren	1	1	1	1	1	1	1																															
Pileated Woodpecker	1	1	1	1	1	1	1																															
Carolina Wren	1	1	1	1	1	1	1																															
Scarlet Tanager	1	1	1	1	1	1	1																															

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[illegible][illegible]





Print the correct STOP NUMBER in the designated space above each column.

SPECIES	#31	#32	#33	#34	#35	#36	#37
Chickadee	2	2	2	2	2	2	2
Cuckoo	1	1	1	1	1	1	1
Yellowthroat	1	1	1	1	1	1	1
Brewer's	2	2	2	2	2	2	2
Marsh Wren	1	1	1	1	1	1	1
WE Vireo	1	1	1	1	1	1	1
Titmouse	1	1	1	1	1	1	1
Grackles	3	3	3	3	3	3	3
Cardinal	1	1	1	1	1	1	1
Acadian Flycatcher	1	1	1	1	1	1	1
Nuthatch	1	1	1	1	1	1	1
Penner	2	2	2	2	2	2	2
Downy wood	1	1	1	1	1	1	1
Crow	2	2	2	2	2	2	2
ky wren	1	1	1	1	1	1	1
Flicker	1	1	1	1	1	1	1
Towhee	2	2	2	2	2	2	2
RE Vireo	1	1	1	1	1	1	1
RB wood	2	2	2	2	2	2	2
RH wood	1	1	1	1	1	1	1
Prothonotary Warb.	1	1	1	1	1	1	1
Redstart	1	1	1	1	1	1	1
Warbling Vireo	1	1	1	1	1	1	1
Scrub Jay	1	1	1	1	1	1	1
Chimney Swift	3	3	3	3	3	3	3
Pileated Wood	1	1	1	1	1	1	1
Y-T Vireo	1	1	1	1	1	1	1
Scarlet Tanager	2	2	2	2	2	2	2
House Wren	2	2	2	2	2	2	2
RT Hawk	1	1	1	1	1	1	1
Eastern Wren	1	1	1	1	1	1	1
Webb duck	7	7	7	7	7	7	7

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37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

BT Hawk



DATE: 5/21/82

TIME 5:50 TEMP. 60°F WIND CODE 1 SKY 0  
 Ending: 4:25 69°F 3 0

Print the correct STOP NUMBER in the designated space above each column.

SPECIES	#45	#44	#43	#42	#41	#40	#39	#38	#	#I
Pewee	1	1	3	1		1		1		9
Blue Wood	2	2	4			1				12
Brewer	2	2		1		1	2	1		17
Cardinal	2	1	2	3	1	3	1	2		28
Cuckoo	1		2		1		1			5
Downy Woodpecker	1				1					1
Crow	2	1	2	1	1	7				15
Carolina	3			2	8	4	2	3		27
Yellow Warbler	2				1	1	1	1		10
Hermit Wren	4				1	4	2			11
Red B. B.	3	2			2	1	4	3		15
Chickadee	3	1	2	1	3	3	1			26
Titmouse	1	3	1	1		2				10
Blue Jay	2		1							3
Prothonotary	1	1	4	1			2			7
Parula Warbler	1	1	2							5
Indigo	1	1	1							4
Yellow Warbler	2									1
Tennessee Warbler		2	1	1						3
Swainson			7	1	2	1				12
Pileated Wood			3	1						4
Nighthawk			1	2						3
Blackburnian			2							2
Wood Duck			1							1
Kentucky Warbler			1							1
Hairy Wood			1	1						3
Red-eyed Vireo			1	1						2
Cuckoo			1			3	7			11
Blue Warbler			2	1						3
Yellow-green Vireo			1							1
Blue Jay			1				1			2
Kingbird					1	1				1
Mocker					2	3		1		10
Canada Goose					7					7

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Print the correct STOP NUMBER in the designated space above each column.

[illegible]

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Starting: 5:30 20 °F WIND CODE 1 SKY 0  
Ending: 9:20 81 °F 1 0

Print the correct STOP NUMBER in the designated space above each column.

SPECIES	#38	#39	#40	#41	#42	#43	#44	#45	#	#	#	#
Robin	4	1										
Condensed	3	2	2	4	1	1	2	3	2	1		
Chickadee	2	1	3	1	2	4	2	4	3	3		
Cardinal	3	3	2		3	1	2	2				
North Star	1	2	2		1	1	2	1				
RW BG	5	11	7	5	3	2			8	3		
Yellowthroat	2	1	1	2	1				2	2		
House Sparrow	3											
Cuckoo	1	1	1	1	1	1	1	1		1		
RT Wood	1	1	1	1	2	1	2	1	2			
Washing Wood	2	3	1									
Barn Swallow	4			2								
Curvebird												
WE Vireo	4	4	2	1	8		2	2		4	1	
Blue Grosbeak	1	1	1	1	1							
Bunting	3	3	2	1	1							
RB Woodpecker	2	1	2	4	1	2	1	1	2	3		
Redstart	1	1	1	1	1	1	1	2	1	1		
Downy Wood	2											
Pewee	1	1	1	1	1	2	1	1	2	1		
Parula Warbler	1	1										
Chimney	1	1		1								
Tyrannulet	1	3	2			2	3	1	2	3		
Scrub Titmouse	2	2										
Brown Thrasher	2			1								
Kingbird	4		4	3	2							
Kingbird	1		1	2								
Orchard Oriole	1		1	1								
Meadow	2		2									
Carolina Wren	5		5									
Tanager	1		1						1			
RE Vireo			1		1	1			1	1		
Wood Thrush	2		2	1	1	1			2			
Pileated Woodpecker	2		2			1	1					

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## SPECIES

	#38	#39	#40	#41	#42	#43	#44	#45	#	#	#
Acadian Chickadee			2		2	3	2	9	1	2	
Hairy Woodpecker			1			1			1		
Gray Sapsucker				1	1	2	2	1	3	1	
Coon				3	2					2	
Dove				3		1		1			
Field Sparrow					1					2	
VT Vireo						2					
GC Flicker						3		1			
Redstart							1				
Carolina Wren							1				
Hummingbird							1			1	
Kn Warbler							1				
Cardinal								2			
Prothonotary Warb								3	2		
Wood Duck								2			
GH Owl										1	

Utilize this portion of the data sheet to record those species observed flying over or through the study area, but not stopping in the study area or those species not a typical part of the habitat type being censused.

Green Heron		1									
Cowbird											
Chimney Swift			6								
RT Hawks					1						



Print the correct STOP NUMBER in the designated space above each column.

SPECIES	#15	#14	#13	#12	#11	#10	#9	#8	#7	#6	#5	#4	#3	#2	#1
Cardinal	2	8	3	9	2	8	1	2	1	3	3	3	3	4	1
Cuckoo	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1
Warbler	10	3	2	2	1	1	14	8	3	2	2	2	2	18	4
Hummingbird	5	3	2	1	1	2	2	4	2	3	2	3	2	2	1
GRH Wren	3	4	1	7	2	3	2	1	2	1	1	1	1	1	1
White-crowned	1	3	2	2	1	1	1	1	1	1	1	1	1	1	1
Red-wings	1	3	1	2	1	1	1	1	1	1	1	1	1	1	1
OS Hawk	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Common Crow	3	2	2	2	4	5	1	1	1	1	1	1	1	1	1
Booby Owl	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Parula Wren	1	5	3	1	1	1	1	1	1	1	1	1	1	1	1
Titmouse	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pileated Wood	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hummingbird	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Golden-crowned	4	2	2	7	2	4	2	1	2	2	2	2	2	2	2
Grackles	2	2	2	4	2	1	3	1	1	1	1	1	1	1	1
Chickadee	10	4	4	5	5	6	5	1	6	4	5	5	5	3	3
Key Whistler	1	2	2	1	2	1	1	1	1	1	1	1	1	1	1
Parula Wren	6	4	4	3	3	1	1	1	1	1	1	1	1	1	1
Catbird	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Nighthawk	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Redstart	3	3	3	2	1	1	1	1	1	1	1	1	1	1	1
Peewee	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Downy Wood	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tanagers	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Yellow-crowned	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Robin	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Grackles	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cardinals	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hummingbird	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chickadee	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Blue Jay	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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SITE H. St

OBSERVER Emilio

TRANSECT SET 7 STOP NUMBERS: 46 to 55

Page 1 of 1  
(for this date)

DATE: 6/5/82

TIME 5:40 TEMP. 64°F WIND CODE 1 SKY 2  
Ending: 10:00 66°F 1 2

Print the correct STOP NUMBER in the designated space above each column.

SPECIES	#46	#47	#48	#49	#50	#51	#52	#53	#54	#55	#
Crackles	6	3	2	6	2	3	4				
Prothonotary Warbler	2	2	3		3	3		3	6		
MacGillivray's Woodpecker	5	1						1			
Titmouse	1				2		1		1		
Wood Thrush	3	2		1	1						
Indigo Bunting	3				2			1			
Chimney Swift - 6	1	4	3	2							
Robin	2		2	3							
N. Oriole	1	3	2		2	1		2	1		
RUWB	2	7	6	3	3	2		4	2		
Downy Woodpecker	2	2	2	2	3	1		1	2		
Carolina Chickadee	3	6	2	2	3	2		2	4		
Parula	1	1	2	2			1		1		
Whitish Vireo	2	2	2	2							
Black-throated Oriole	1	2									
Black-throated Green	1	2									
Belted Kingfisher	1										
Red-bellied Woodpecker	1	6	2	4	3	2			1		
Tree Swallow	5										
Carolina Wren	2		3	1	2	1		1			
Chimney Swift	2	4	3	2					2		
Robin	1	2		1							
Carolina Wren		1	6	3	2	1		3	3		
Green Heron		2			2	1			1		
Killdeer		1				1					
Hebrew Wren		1	1								
Blackbird			2	1	1	2	1	1	1		
Flicker			1	1							
Acadian Flycatcher			2		2		2		2		
Starling			1								
Robin				2							
Hebrew Wren				4			4				

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SITE

ALCA

TRANSECT SET

7

STOP NUMBERS: 46 to 55

Page

(for this date)

DATE: 6/11/72

OBSERVER

SAMS

Print the correct STOP NUMBER in the designated space above each column.

Starting: 5:20  
Ending: 9:55

TIME 5:20 9:55  
TEMP. 58°F 72°F  
WIND CODE 1 1  
SKY 0 0

SPECIES	#46	#47	#48	#49	#50	#51	#52	#53	#54	#55	#	#
Belted Kingfisher	2	1			1							
Meadowlark	3			2		5						
Robin	4		6	1								
Warbling Vireo	3											
Tree Swallow	2		2		1							
Gray Catbird	4	2	2	3	3	2	2		1	5		
Cardinal	3	2	2	5		3	5		6	6		
Robin	1	7	3	1	3							
Chickadee	3	1	2	1		2						
Downy	2											
Brewer's Sparrow	2											
Prothonotary	2	5	2		3	2	4		6	2		
Yellowthroat	2					1						
CRH Wood	1								2	3		
Cuckoo	1	1	2	1	1	5	1					
Wood Thrush		10				12						
Warbler		4	2			1			1	2		
RR Wood		1	2	1								
Grackle	2	10	5	5	1	5	2		2			
Kingbird		2										
Phoebe		2										
Chipping Sparrow		2										
Peewee		1										
Killdeer		1				1						
Crow		2		1		2						
Magpie		1		2	3	2						
White-eyed Vireo		1										
Bank Swallow		3	2	1		1	2		1	3		
Thrush	1											
Mocker												
Blue Jay			8									
House Sparrow			1									
Tree Swallow			1	8								
			5									

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54

8511

1149

051

7511

252

53

54

5

7

1

Cuckoo  
 Red-tailed  
 Downy Wood  
 Acorn Woodpecker  
 Blue Jay  
 Red-eyed Vireo  
 Goldfinch  
 Great Blue Heron  
 Little Blue Heron  
 Yellow Warbler  
 Hooded Merganser  
 Yellow-crowned Night Heron  
 Hairy Wood  
 Yellow-rumped Warbler  
 Redstart  
 Field Sparrow  
 Song Sparrow  
 Packed, warblers

Utilize this portion of the data sheet to record those species observed flying over or through the study area, but not stopping in the study area or those species not a typical part of the habitat type being censused.

Green Heron  
Wood Ducks  
Grease  
KW 133  
Cisindar goose  
Brown f  
Chimney swift



SITE

1-2A

TRANSECT SET

7:15-8:00

NUMBERS:

46 to 55

Page

1

OBSERVER

W. W. S.

(for this date)

Print the correct STOP NUMBER in the designated space above each column.

Starting: 5:40  
Ending: 10:10

TIME  
TEMP. 65°F  
WIND CODE 0  
SKY 0

DATE: 6/18/82

SPECIES	#52	#53	#54	#55	#51	#50	#49	#48	#47	#46	#
Downy Woodpecker	2			2		2		1			
Chickadee	3		4	2	2	4		2	2		
Grackles	5	3	5	5	5	2		3	1		
Great Crested Newt	1	1		1				1			
RH Wood	2		1	1				1			
Yellow-Throated Vireo	2		1	1				1			
Flicker	1	1									
RB Wood	1	1									
Kingbird	1	1									
House Sparrow	2	1									
Parula	1	2	2	1			1				
Acad. Lin. C. Warbler	1	2	3	3		1		2			
Wood Thrush	1					2					
Cuckoo	1	1		2	1	2	1	2			
White-throat	1	2			1						
Orchard	1	2	3	2	1	3	2	2	2		
RV BB		5			3		1	8	5		
Green Heron		2			2						
Lesser Blue Heron		1									
Titmouse		2	1								
Dove		1	2	1				2	1	3	
Killdeer		1			1						
Nuthatch		2	1	1						3	
Key Warbler			2			2					
House Wren		1									
Scarlet Tanager											
White-eyed Vireo				1							
Grackle				2						1	
Red-tailed Hawk										3	
Blue-winged Teal					10						
Chat					1						
Parakeet					3		2			1	

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SITE 501

OBSERVER G. J. ...

TRANSECT SET 1 STOP NUMBERS: 16 to 25

Page 1 of 1  
(for this date)

DATE: 6/28/82

TIME 5:15 TEMP. 72°F WIND CODE 1 SKY 0

Starting: 5:15

Ending: 9:35

Print the correct STOP NUMBER in the designated space above each column.

SPECIES	#46	#47	#48	#49	#50	#51	#52	#53	#54	#55	#
Belted Kingfisher	2	2									
Blue Jay	3		2		1						
Red-shouldered Hawk	2								1		
Cuckoo	2										
Red-bellied	2				1	3		2	1		
Cardinal	3	5	7			3		5			
Wood thrush	4	2	4		2	2	3	4	2		
Downy Woodpecker	3		1								
Chickadee	4	1	1		2		2	1	2		
Parula	2	5	4		3	2	4	2	4		
Carolina Wren	5	2									
Pileated Woodpecker	2										
Chipping Sparrow	1				1	2		2	1		
Great Green Heron	1										
Wood Thrush	3	2	1		2						
Wood Duck	1								2		
Indigo Bunting	10	10	5	3	1		1				
Yellow Warbler	1	1				2		1			
Green Heron	1	1	2	1	3						
Tennessee Warbler	2	2			1	4		1	1		
Orchard Oriole	1		1								
Kingfisher	1										
Chipping Sparrow	1		2					2			
GH Oriole	1										
Parula			2	1	1	1		2	2		
Red-shouldered Hawk			1								
Blue Jay			1	1							
Wood Thrush			3			2	2	2	1		
House Sparrow			2								
Chickadee			1								
RS Hawk				1							
Parula						2					
Sp. ...						2					

Note: The left space in each column is for use in recording birds detected during the transect between points; the right space is for use in recording birds detected during the 10-minute stop. Use appropriate spaces on the reverse side for recording birds flying over or through the study area which do not stop in the study area.

















